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MANITOBA

ANNUAL REPORT 10:1982

Manitoba
Environmental Council

Manitoba Environmental Council Box 139, 139 Tuxedo Avenue, Winnipeg, Manitoba R3N 0H6

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October 22, 1982

The Honourable Jay Cowan,
Minister responsible for Environmental
Management,
333 Legislative Building,
Winnipeg, Manitoba.
R3C 0V8

Dear Mr. Cowan:

I have the honour to present herewith, Annual Report Ten, of your Council.

This report details the Council's activities during the fiscal year ending March 31, 1982 and includes information regarding the Annual Meeting held on May 14, 1982.

Yours truly,

Bill Kennedy

Bill Kennedy,
Chairman.

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Manitoba Environmental Council

Annual Report Ten: 1982

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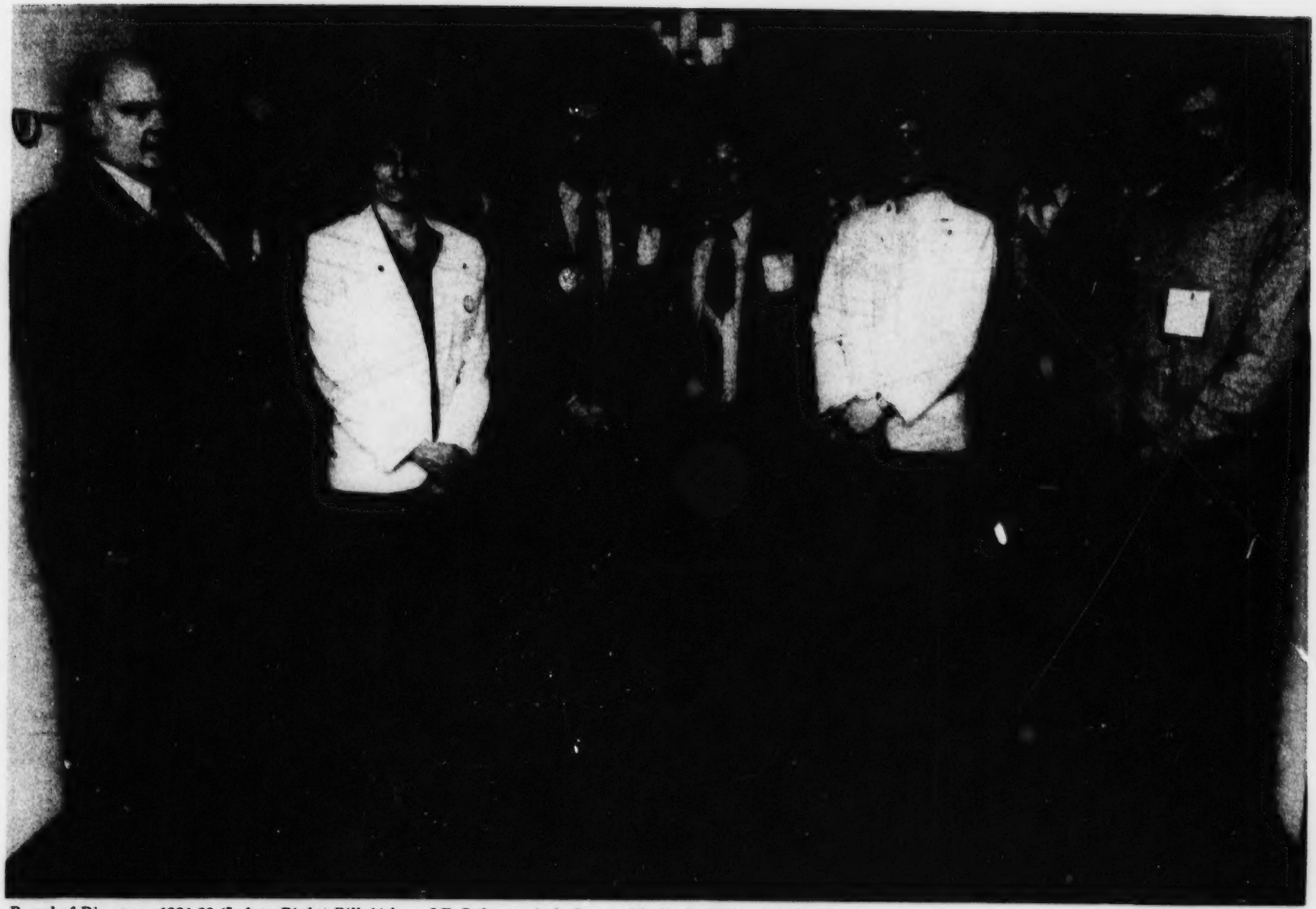


Board of Directors, 1981-82 (Left to Right) Bill Aitken, J.F. Palamarchuk, Donna Blight, D. Muir, A.C. Maniar, Bill Kennedy, J.J. Keleher, Lewis McCall, Chris Sundevic, Diane F. Malley, Basil Rotoff, Ron Phillips & Barry Muir.

CHAIRMAN'S REPORT

Bill Kennedy

It gives me great pleasure to address the Council as a whole for the first time. I've enjoyed the first six months as your Chairman and I look forward to another active and progressive six months.

Events like this give us an opportunity to pause and reflect. My first contact with the Council came in 1976 when I was involved with a number of other landowners opposing a Manitoba Hydro Transmission line through the Springfield area. I was able at that time to get fairly well acquainted with the Council and some of its key people. Now, five years later, I find myself a relatively new member of Council and at the same time in a position where I'm getting very involved in all the Council's activities and meeting with many of the Council's active members.

If you recall my acceptance speech back in May, I talked about the concentration which I hoped the Council would give to the proposed mega projects, many of which were only rumours at that time. I'm rather delighted today to see so many briefs pertaining to them.

One of the first duties of a newly elected Council Chairman is to attend the National Conference. I was fortunate to go to Banff on your behalf in June of this year and to put the Manitoba situation in a broader national context.

We dealt with several key areas of Canadian environmental concern at the conference. In particular we dealt with the need to preserve Canadian agricultural land resources. Those at the Conference were very moved by the presentations which we received from agricultural experts. I was convinced for the first time that while we think of Canada as the "bread basket of the world" we are reaching a very critical stage in our handling of farm lands across Canada, including the lands that we have in Manitoba.

We talked as well in Banff about the need for an early warning system to alert public officials and the public at large to incremental environmental change; those kinds of environmental damage that are so incremental and so slow moving that you never really can see them until it's too late. Acid rain might be a good example.

We talked as well about the need for public participation in all phases of environmental work and at many levels of government — local, provincial and federal — and we drew resolutions to that effect. Those resolutions will be dealt with at the Board level and will be brought back to the Council at our annual meeting this coming May.

Other findings from the Banff Conference were the obvious need, derived from our meetings with the other provincial advisory people, of strong interprovincial co-operation. We talked about the need for compatable standards for air, soil and water quality objectives — standards that could not only make improvements to existing standards within the provinces, but also standards that could be commensurate in comparable province to province, in order that our regulatory people can talk on common grounds. We can all have a better idea what we're talking about when we say that perhaps our air is a little bit better than Alberta's or that their water is a little bit better than ours.

We also found a definite need for a better funding of advisory councils. We noted quite clearly that our own Council is perhaps one of the least funded advisory councils across Canada. This is interesting, particularly in light of the fact that we are one of the largest.

We also talked about the need for environmental legislation and again in Manitoba, where we do not have environmental inpact assessment legislation. This is an area of concern that we hope to turn our attention to over the coming few months under the direction, of course, of our new Minister.

Let me turn a little bit closer to home and have a brief look at our own Council. I've mentioned that the May 8 meeting was a benchmark for membership. I think that we have our highest membership in our ten-year history. We've got very good regional representation, perhaps for the first time. The Executive and Board believe that we do have a need for improved support services; services in the form of clerical services and secretarial services to assist us in our own internal communication, communication between committees, Board and Executive and to the membership at large. For a volunteer organization that is spread across the provinces as ours is with committee meetings at different times and different places, we have found that we are developing a very heavy reliance on the government support services. To date, while the secretarial staff are very hard working, we don't have the kind of access to them and the kind of priority attention from

them that we need. For a volunteer organization such as we are, it is particularly critical that we get the kind of services so that mail-outs, records of meetings, etc. are processed as rapidly as possible.

In terms of our ongoing committee work, I'm pleased to see that most, although not all, of our committees are working very well. The fruits of their labour will be evident to you very shortly. That summarizes my remarks for this morning.

* * *

Presented at Dec. 7/81 Council Meeting

First of all I think that we have had a very productive year. I think that while attendance at some of the committees has been down somewhat, overall it's been generally a pretty good turnout. We had expected a better turnout this morning and I'm not really sure if we're competing with the good weather outside or the mosquito control hearings elsehwere, or just what. But I wanted to review for you this morning a few of the highlights of the year. I think of particular mention is the special seminars and forums which our technical committee chairman organized throughout the year; special educational seminars, in particular the one that we had on Alcan that Dr. Malley organized; another on the city water quality that Dr. Maniar organized and another on the program of nuclear waste storage study that is ongoing at Pinawa. I think another key highlight of the year was probably the 10th Anniversary forum where most if not all of you attended. The very interesting array of speakers and certainly some of the topics which they touched on were of interest and I think of importance to us all. In particular, at the 10th Anniversary, Chief Justice Berger's talk in addition to the very moving speech that Dr. Bob Newbury gave us at the evening meal, I thought were very interesting and certainly highlights.

I think another highlight of the year was the Regional Board Meeting which we held in The Pas. It was the first time the Board had met outside of Winnipeg and it not only provided us with an opportunity to get some face to face contact with people in an area outside of Winnipeg in terms of listening to their regional concerns about a wide array of environmental matters, but I think it also gave the board an opportunity to get to know one another a little bit better in a kind of a situation that doesn't often happen when we meet

in a more or less business kind of session in Winnipeg.

Another highlight I think was the seminar that we organized, that Chris Sundevic organized, in Thompson on acid rain and in particular the INCO emissions. It was a very interesting forum from what the press reports said about them and we had membership making presentations at that forum.

Both those last two events I described hit the headlines in the Thompson and The Pas papers, so it gave us a little bit of publicity which we're looking for.

I think another highlight was the cartoon contest and we're going to be hearing from Ron Phillips later in the program about the winners of the cartoon contest and we're expecting the Minister to present the winners with their winnings.

Internally, in terms of the Council operation and the board operation we've made a few steps ahead I think and a bit of progress here and there. I think in terms of our membership we have probably have hit a banner

year. We've got a very good mix of people from Winnipeg and from out of town; from the north, from the various regions south, west and east in the City, and I think we've got a good organizational versus individual memberships split. Mr. Palamarchuk is to be congratulated on that of course. Another item, of note, we have been able to clear up some of the publications backlog which the Council has suffered from over the past couple of years and we're pleased to say that our annual report from our last annual meeting is coming out I think in a few weeks, or a few days perhaps. I've seen the manuscript from the Queen's Printer so it is just a matter of getting it edited. We had hoped to have it here to distribute to you this morning, but unfortunately we are not able to. So we're not two years behind on annual reports, we only a few weeks behind and we hope to make that up in the coming year and have the annual report out well in time for the next annual meeting.

In terms of our membership again, we have automated our membership list, it is finally on a word processor and we'll be able to update and change and amend it as new faces appear rather rapidly.

I mentioned the request to the Technical Committee Chairman to introduce their STEP students. There is one I met coming in this morning, Ed Sellers, who is working in our Council office and will be assisting Mr. Keleher on a wide range of office activities including some editing of publications.

We have, as you know, tried to institute future planning in terms of getting our meetings forecasted early and trying to schedule work through the typing pool. I think this has met with some degree of success but it takes a constant effort on the part of everyone, if they are preparing briefs or reports to get them in on the deadlines that are set and when planning meetings to try and let everybody know well ahead of time when they are and where they are. I think that the workload in terms of typing and clerical duties that we have put through our typing pool in Building #2 at Fort Osborne has been considerable this year. I'd like to just take the opportunity to thank the typing pool and in particular Barbara Deans for the very great effort that they did make.

I want to just briefly mention the upcoming event that is in Manitoba, being jointly sponsored by the Federal Department of the Environment and the Provincial Environmental Management Branch and the Manitoba Environmental Council, and that is National Environment Week which this year is running from May 30th to June 5th. We are participating in an organizational committee with those two parties and I just wanted to make a quick review with you of those events that are being planned for this year. We have a poster at the back. The theme for the National Environment Week is "What's New in the Environment" and I guess the subtheme is "Environmental Concern Starts at Home".

Just a quick review of some of the highlights. The Minister is involved in a number of radio talk shows and announcements in the week prior to May 30th. I'll be involved on one of the "action line" shows with him and Stan Eagleton of the Clean Environment Commission. In addition to that, during the week itself we have got a poster campaign. These posters, like you see at the back, are being mailed out to schools. There is also going to be a radio blitz, advertising on radio both in Winnipeg and in rural Manitoba. And in addition there is going to be a mall display with several displays related to the environment and various facets of it, that will be going on at Eaton Place on the 3rd, 4th and

5th of June, which is a Thursday, Friday and a Saturday. The Council will be having their own display. We have an array of photographs and concerns that we deal with on both an annual and on a day to day basis. They will be featured as our own display and we're going to be looking for volunteers to help us man that display, or woman that display and we are circulating this morning a list of the time slots and if you think you'll be able to give us some assistance for 3 or 4 hours please put your name down.

In closing the opening remarks, I'd like to make some special thank yous this morning. These are personal thank yous for the help and assistance that I've received over the past year and in particular I'd like to mention a special thank you to Dianne Malley for her hard work in the Environmental Chemicals Committee and we'll be hearing some of the results of that hard work later this morning. I'd like to thank Derek Muir for his support in providing a continuity between the former board and the current board. I'd like to also thank Donna Blight our secretary for the taking of very excellent and detailed minutes. In addition I want to thank our regional chairmen for their help and their insights into some of the concerns that take place in the regions of Manitoba. I want to thank Betty Pawlicki who is unfortunately not able to be here this morning. Jim Knight, Bill Aitken, Rich Howard and in particular Chris Sundevic for his assistance in helping to organize the Thompson seminar as well as The Pas regional meeting and I think particularly Barry Wild for his assistance in organizing The Pas meeting, and for his very interesting reports which we receive in board meetings on a regular basis.

Lastly I would like to thank Mr. Keleher for his insight, his constant support and for his very active involvement in all facets of the council's business.

* * *

Presented at May 14/82 Council Meeting

Table 1 1981/82 Monthly Meetings Record.

Committee[a]	Monthly Frequency												Total
	A	M	J	J	A	S	O	N	D	J	F	M	
Tech. Committees													
Education						1	1			1		1	4
Energy						1	1	1	1		1	1	6
Envir. Chem.						2	1				1	1	5
Land Use	1					1	1						3
Water and Waste	1					1						1	3
Wildlife						1	1	1	1		1	1	6
Publications	1			1			2	1	1		1	1	8
Membership	1			1	1	1	1	1		1	1	1	9
Chairman		2	2	3		1	2	3	2	1	1		17
Executive	1	3		1		1		1	1				8
Board	1		1			1		1		1	1	1	7
Council		1							1				2
Total	6	6	3	6	1	11[b]	10	9	7	4	7	8	78

a: Nominating data not available

b: All Technical Committee meeting held Sept. 16, 1981

MINISTER'S ADDRESS

Honourable Jay Cowan

I want to thank you Mr. Chairperson, Executive and others for the opportunity to be with you this afternoon. It is indeed a pleasure to spend some time with the Manitoba Environmental Council. I know from your agenda that you've put together a fairly packed working day. Its really quite an extensive and expansive agenda which guides you through today's meeting and it clearly illustrates the wide ranging and the far reaching activities of the Council throughout the past 10 years. It is quite an impressive list and I want to commend both the leadership of the organization as well as the membership of the Council for such a productive year.

I also want to take this opportunity to ensure all of you that your work of the past year and your efforts overall in the past, to enchance and to protect the quality of the Manitoba environment, is both appreciated and acknowledged.

At the same time, Annual meetings are always appropriate for these sorts of messages, so I want to wish you a productive year for the upcoming 12 months. I am confident that you will continue to build upon your record of success. Now having said the traditional thing and duly noted your heavy agenda I want to share with you the spirit of this meeting. This is a working meeting, dedicated not only to reviewing the past but also directed to planning for the future. Therefore I wanted to reflect a bit on the past and at the end of my remarks perhaps speak very briefly to the future.

Firstly, I'm in possession of a number of briefs arising out of your December 7, 1981 meeting which happened also to be your 10th Anniversary Celebration. I take this opportunity to apologise for the delay in responding to the advice provided to me through those briefs. I assume full responsibility for that delay. It seems that its taken me a bit of time to learn the ropes and to learn the obligations and responsibilities of a Minister as well. I also wanted to have an opportunity when responding to that advice to do so in person, if that was possible. It appears as if it will be so during today's meeting. I think that enhances the values of the briefs and presentations which you have made to me.

These briefs and your advice are greatly appreciated. I welcome this opportunity to address some of the issues which you have brought forward. I'll go through them one by one if I can.

Your first brief called upon the Manitoba Government to prevent any decision being taken by the Federal government to permanently store atomic or nuclear waste in the Pinawa - Lac du Bonnet area. Now we all realise that this is a concern, given the activity being undertaken by AECL in the area now in respect to some research projects. I can inform you that the previous administration had entered into a 21 year lease with AECL for the use of Crown Lands. Because they were using Crown Lands for that activity we did have some bargaining room and bargaining power. There were some changes in the lease as time went by to try to clarify it and more explicitly provide for the protections thought necessary. But as a result of that lease, included in it specifically and it is my understanding that it was included in it purposely, was a prohibition against the storage or the use of any nuclear waste at that research site.

Further to this lease and contractual assurances, the Environmental Management Division has been informed by ACEL that they have no plans, at this time, to develop any such nuclear waste disposal site at Pinawa. I use the words "at this time" advisedly so, because we know that plans change. For that reason as a responsible and what I believe to be a forward looking government ourselves, and we acknowledge that research is needed to develop safe disposal methods for nuclear waste - we have to do something with that waste - we also have made clear our concerns respecting the use of the Pinawa site as a waste disposal facility for AECL and to others. I can assure you also that we will maintain our vigilance in this regard.

So we have a lease in place that prohibits the use of that site for that purpose. We have grave concerns about that and for that reason we keep our vigilance on guard at all times to ensure that the best interests of this province are being looked after by the Environmental Management Division. So those assurances I can give you in response to that specific presentation.

Your second brief dealt with the proposed Alcan aluminum reduction plant and the environmental and the socio-economic impact analysis and assessments which **MUST**, I underscore that word, which must be undertaken previous to any construction of those plants.

I wish to address this particular subject, which is a specific request, in a general way

and in the context of your third brief which dealt with the need for a more rational way to evaluate environment impacts on major projects in this province. I do so because you can't separate Alcan, potash, hydro or any major project and let it stand on its own without trying to place them in context of environmental evaluation mechanisms.

I know that all of us in this room share this belief, that we as a province must develop a comprehensive and a complete environmental and socio-economic impact assessment process. We must do so if we are ever to fully exercise our right and our responsibility to protect the environment — the environment in which we all must survive and for which we are all custodians for every generation yet to inhabit this earth.

We are now, as a department, as a government, developing ways to enhance that protection. We are undertaking efforts to design and bring forward a comprehensive policy and a systematic approach to undertake environmental and socio-economic impact assessments where necessary. Over the next year we will be reviewing options which are available to us as a government, as we seek to develop that process.

In the meanwhile, it is a long-term project we're discussing now, I wish to discuss with you today some of the basic principles which may be a part of any comprehensive impact assessment process. It is our intention firstly to develop an integrated and co-ordinated assessment process which takes into consideration simultaneously both environmental and socio-economic impacts and prior to irreversible and potentially destructive actions which may arise out of any undertaking of this sort. In other words we know you can't isolate the environmental impacts on one hand and the socio-economic impacts on the other and then later try to bring them together and have a comprehensive picture of the effect of a project of this magnitude, or any major project. We want to undertake simultaneous evaluations. We want to undertake them previous to irreversible or potentially destructive actions being taken.

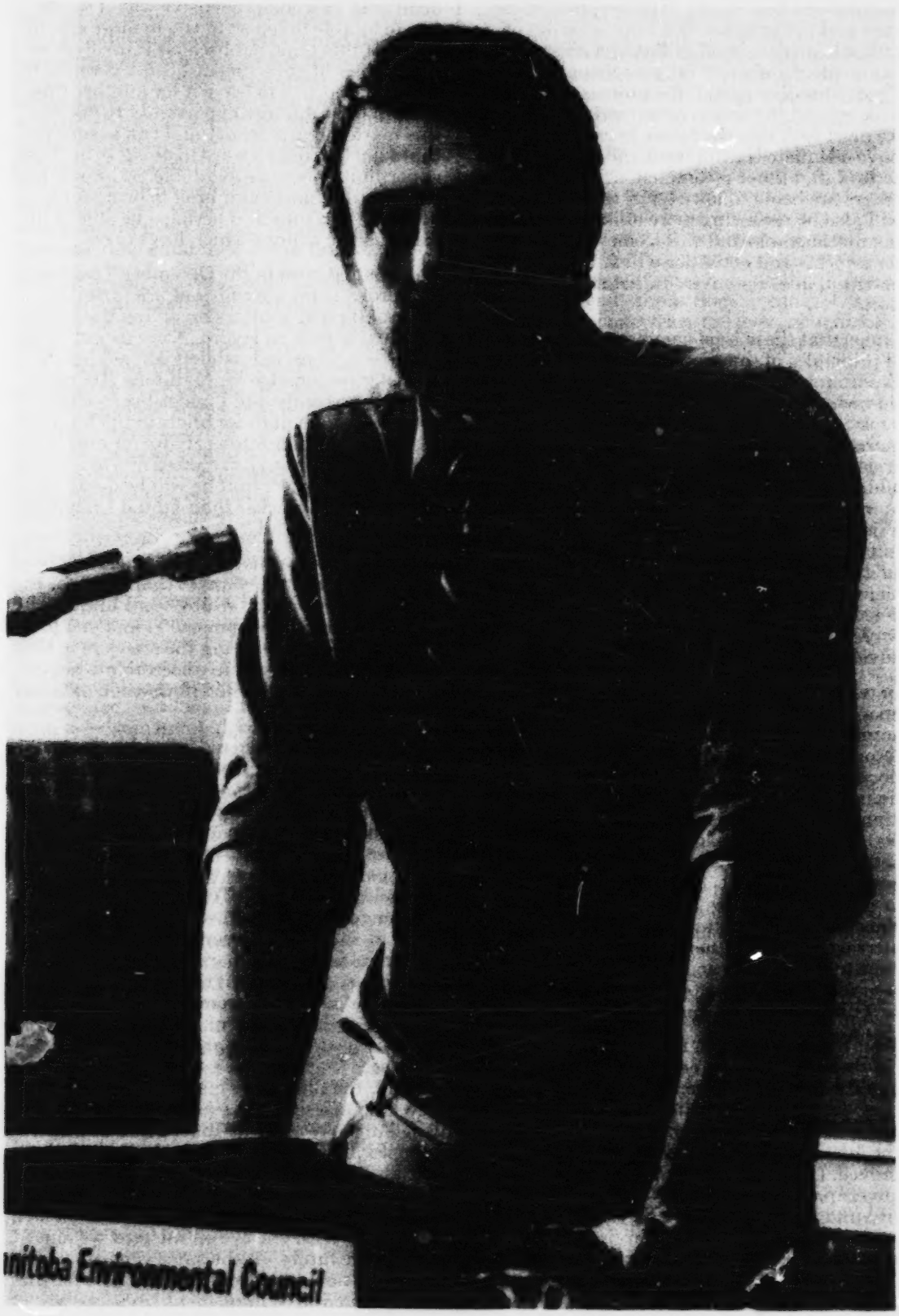
In keeping with my government's strong commitment to allow the public — I'll go beyond that — to encourage the public — the opportunity to participate in the development of major initiatives and innovative programs such as this, we will be inviting them to provide their suggestions as well as their criticisms as we begin to put an assessment package together. I'm especially looking forward to the continuing advice of your own council as we examine certain specifics of the program over the next number of months. We will be bringing those to your attention and to the general public's attention as they are developed and ready for that action.

We also intend to build in to the overall impact assessment machinery a strong public participation component, so that the general public can share with both the project proponents and the province their concerns and criticisms. When discussing environmental and socio-economic impacts criticisms are for the most part constructive. They are necessary to develop comprehensive response mechanisms necessary to ensure the protection of not only the environment but the economy. So we expect people to come forward with positive suggestions, with constructive criticism. We expect them to come forward in support of proponents of projects as well. Even though they may not be financially involved in the project, they may see it as a benefit to their own community, in both a socio-economic and in an environmental way because not all projects are environmentally defective. To that end we anticipate that there will be environmental impact statements developed for major projects. These will be open for public and scientific scrutiny and comment, in advance of and during the assessment process. In other words we don't want to throw on the public a very vague document and then ask them to respond in the type of detail which we need if we are to govern on their behalf.

So we expect that environmental impact statements will be circulated to the public far previous to the commencement of the actual assessment hearings, so that the scientific community and the general public have an opportunity to digest them. When people come forward to give us their advice, suggestions, and criticisms they are doing so based on the best available information that we can provide.

That will be part of the process but I might throw a caveat in here. This is going to take time to develop in a rational way. We cannot promise to have those environmental impact statement guidelines in place for the next project, if it comes on stream very quickly. However, we can promise that it will be part of the overall package. We are making this a priority within my own department.

Finally, we fully realize that any analysis and review of a project can only be truly effective if there are adequate ways by which project development and implementation can be monitored effectively to see that the recom-


nitoba Environmental Council

mendations that arise out of the public hearings and the orders which may arise out of public hearings, or other mechanisms, are being adequately and fully implemented. That is another part of the process. We must look beyond the actual construction phase, we must look into the future to ensure that we have adequate control mechanisms to make certain that those recommendations and orders are being followed. For that reason we will also be reviewing more effective monitoring mechanisms and enforcement procedures for projects and activities which have the potential to cause environmental degradation.

I hope that these brief comments and outline of principles of the process provide the Environmental Council with some information which it can digest, discuss, and respond back to the Minister and the department in more detail in the future. This is one of the crucial areas that we must address. We must address environmental problems from a number of perspectives. I believe the most efficient use of our time can be to address future problems to prevent them from occuring. We strongly believe that this environmental impact assessment process must be developed in a comprehensive and rational way. We rely upon your expertise and your advice as we start that process.

In respect to your fourth brief which called upon the provincial government to lead by example in the conservation of natural resources by using de-inked and recycled stationery in its correspondence and its publications, I requested that the Environmental Management Division undertake a review of both the current use of such material and its potential for greater use within the provincial government. That is not to say that we will in every instance be able to use those materials but we will certainly look at ways to increase our use of them, if that is possible. I hope to be able to respond in more detail to your advice and your request at a future date as we have that information available to us.

Your final brief which falls primarily under my own area of responsibility deals with the quality of the Red River. Your recommendation was that special attention and priority be given to the development of ways by which the quality of the Red River water can be improved. I am pleased to inform you that the government is addressing this issue in a positive and a comprehensive way. There is the recent report of the Clean Environment Commission* and the beginning of necessary discussions and deliberations to ensure that this very complex and very significant problem is dealt with in a comprehensive way. I would like to be able to report to you in more specific detail at this time, but because it involves several levels of government I think it would be more appropriate to leave it for another time. We will have another opportunity to discuss this matter in greater detail. I can assure you that I am looking forward in doing so as those opportunities become available. So I would beg leave on that particular brief to bring forward at a different time and perhaps be able to discuss specific actions which have taken.

The Council, also in the December 7 package, forwarded to me a number of briefs dealing essentially with matters involving the pricing policy of Manitoba Hydro. A number of those have been answered publicly already by the Minister responsible for Manitoba Hydro. I have just recently and I underline recently, provided copies of those briefs to the Minister responsible for Manitoba Hydro for his review and his comments. I have asked him to respond directly and expect that he will be doing so shortly, much quicker than I did if I might be self critical for a bit.

So with those responses to your briefs and your advice of last year, I want to thank you for the time and effort which so obviously and clearly went into their development. Thank you for your patience in awaiting the answers to that advice. I hope that we have been able to provide some insights and some information as to our response.

I will end my remarks today, as I indicated earlier, on a somewhat futuristic tone. Reading through the briefs or the package of materials provided to delegates, I noticed a very well put together document on acid rain and another well put together document on hazardous waste management, site disposal, and selection criteria. These are some of the challenges which face us as citizens of a modern, industrial nation. They are complex and more importantly urgent. They will test each of us, each of us in this room individually, each of us in this room collectively. They will test each of us to our limit as we attempt to avoid past mistakes and to build upon the successes that we have encountered in the past for the future. We must begin to develop new responses for some age old problems. It is not an easy task. We must begin to anticipate ways to confront future challenges. As one author put it, albeit within in a somewhat different context, we must prepare to confront future shock. That is a task that we must look to as well. With one eye on the past we must look to the future. At the same time, and I am speaking now as a person responsible for the Environmental Management Division, we

C.E.C., 1981 Report on a proposal for the classification of Manitoba's surface water: Red River principal watershed division, 194 p. — eds.

must deal on a daily basis with serious problems which force immediate attention. We have to approach the protection and the enhancement of the environment from those perspectives. Finally, in the midst of all this, looking to the future, correcting past mistakes, dealing with daily activities, we must be able to seize potential where it exists and take advantage of opportunities that present themselves. So as a government we know that we must assume responsibility for dealing with many of these serious concerns and at the same time build for a better future.

We also know, I say this to you quite sincerely and with more fervour that I would have said six months ago, we also know that we have no monopoly on wisdom. It is a lesson well worth learning, difficult at times, but one that we have learned. We need and appreciate the best advice that we can receive. On many environmental matters we quite naturally turn to your Council, among others, for that advice and expertise. Given the demands and the increasing environmental challenges we will most likely be placing greater demands upon the Environmental Council to provide more advice in the future. Correspondingly, and I want to be very careful in how I phrase this, because I don't wish to be interpreted as reflecting badly upon your past activities. I want to say that in the past the advice of the Manitoba Environmental Council has been both beneficial and appreciated. But I want to say this rather in acknowledgement of a growing awareness of the need for a positive and greater action on the part of governments to meet environmental concerns and at the same time, as a result of a strong commitment on the part of this government to do so. I am requesting that the Council take some time over the next few months, and I don't wish to impose an arbitrary deadline on the Council, but over the next few months, to examine its past activities and at the same time, with one eye to the past and the other to the horizon, to anticipate its future needs. This request is especially appropriate giving this is the beginning of your second decade. As a council it is time for reflection as well as for planning.

I have discussed this request informally with some members of the Council. However, I would now like to formally lay out that challenge and request that the Manitoba Environmental Council officially undertake an internal review of the ways by which it can grow with the increased need for advice and expertise in environmental management, which it's government is going to require of it. So I am looking forward in future to discussing your deliberations with you, as we grow together, and as we work together for a better tomorrow. Thank you.

MR. KENNEDY: Thank you very much Mr. Cowan. I would wonder if you might have a few moments to respond to questions from the membership?

DR. MANIAR: Thank you, Mr. Minister for replying to some of the briefs and also your reference to the twenty one year's lease to the AECL. During that lease you mentioned there won't be any kind of waste disposal carried out. What happens after 21 years, that kind of condition is not specified? There is a hole already there. Someone might say, "look, twenty one years are over, now we can use it." Is there any guarantee that that won't happen?

MR. COWAN: Unfortunately there are no guarantees that won't happen. I would be foolish and dishonest to try to provide such guarantees to you. However, the lease as well does call for a closing of the facility that would be accomplished in the return of the environment to as close to its natural state as is possible. I'm no lawyer but it is my assumption that it would be difficult for them to undertake a different use of the land without obtaining another lease from the government. They may wish at one time to come forward and request a lease from the government to store nuclear waste there. That is not out of the realm of possibility. This is certainly something they have not indicated they would be doing. As a matter of fact they had given us assurances to the contrary. But times change. That is why, when we discussed this matter we not only talked about the safeguards in place today but we talked about the vigilance which we will exercise on behalf of the people of this province to ensure that any activity whether it be involving nuclear wastes, hazardous waste or any other type of major economic development, would not be undertaken without the full environmental impact assessment and scrutiny and public participation. So the safeguards which exist in respect to that are the same as the safeguards which exist in respect to the holes up north that could be filled in much the same way. I believe that there are two or three parties which have a responsibility in this regard. One of course is AECL. Another would be the government of the day, and I don't even in my fondest hopes and dreams anticipate being in the government in 21 years, but I'm certain there will be good people in the government in 21 years and we must rely upon them to a great extent to exercise caution and responsibility in dealing with this

situation. At the same time I know, notwithstanding what government will be in power there will be good people in this province, outside of government, but in influential positions who should undertake to again exercise their right and their responsibility to protect the environment. So having those two assurances in mind I can give you no guarantees other than to tell you that I am satisfied that there are mechanisms in place to prevent a unsatisfactory use of that facility.

MR. KENNEDY: Are there further questions from the floor? If not I have a couple.

I have been encouraged by your remarks about the sophistication of our environmental impact assessment guidelines and their applicability to projects across the province. However, our Council has gone on record in the past and I think currently holds the view that what we're interested in is environmental impact assessment legislation, not guidelines. Would you care to comment on that?

MR. COWAN: Certainly, I don't know if I can give you a definitive answer. Legislation has been used in other jurisdictions for this purpose and in some instances it has not been used. We are reviewing the experiences of those other jurisdictions as well as looking at the context in which we must place our activities, that is the Manitoba context. We are looking at legislation as one of the options. We are not philosophically opposed to it. If there is a role to be played by legislation I can assure you that we will develop that legislation and have it in place. If we feel that the objectives which we are attempting to promote, that is the preservation of the environment and non-degradation of the environment as the result of major projects, can be accomplished either in the short or the long term without legislation, then we would not be philosphically opposed to that course of action either.

In short, we're prepared to look at legislation. We are looking at the experiences of other jurisdictions. If we feel that it is necessary here we will be prepared to bring it forward for public discussion and implementation.

PROFESSOR SELWOOD: The City of Winnipeg Act did or does contain environmental impact clauses. Could I suggest that an examination be made of the effect of these parts of The City of Winnipeg Act on the activities of the City of Winnipeg and the attitude they've taken towards those clauses?

MR. COWAN: That is good advice. As I said we were looking at other jurisdictions. That is certainly one of the ones that will be reviewed as well as those outside the province. I think the point inherent in the comment is that not only must there be the mechanism to protect the environment there must be the will to protect it. Without reflecting upon another jurisdiction's will or lack of it I can assure you that this government does have that will to protect the environment appropriately.

MR. SELLERS: Mr. Minister, I'm personally heartened by your attempt to increase the role that this Council can play in providing possible guidelines for environmental management and control. In view of some of the discussion around town and in parts of the province about possible Cabinet reshuffling, I am wondering whether or not we will be fortunate in looking forward to a heightened sense of rapport with you in the fulfillment of your office as Minister responsible for Environmental Management or will we be looking towards some sort of senior level change in this regard.

MR. COWAN: That request can be better addressed to my leader the Premier of the Province. I don't know what he has in store for me but I do know that his commitment to the environment is as strong as mine. He will not in any instance or in any way diminish that commitment by appointments that would be inappropriate to the position of Minister for Environmental Management. I certainly hope that I will be able to stay in that position long enough to effect some of these changes but that's looking to the future and we haven't developed a Cabinet Environmental Impact Assessment process yet.

MR. KENNEDY: A specific question Mr. Cowan. We have requested receipt, for study, of the environmental impact studies done by Alcan. I wonder if you could give us an indication of when we might be able to take a look at those documents?

MR. COWAN: I can't give you any specific indication now. As you know, with the negotiations in progress, there are no pre-set conditions as part of that set of negotiations with Alcan. That does cast a somewhat different light on the environmental impact assessment process iniated by the previous administration. What we are doing is providing the assurance that if and when a site is determined and we could not say which site that would be because there are no preconditions, that we will have full public participation in any environmental impact assessment. At that time documents which are necessary to the public and the scientific community to allow them to undertake the

scrutiny which will enable them to provide the type of comments which we want will be made available to them before asking them for their comments. So the documents that will be available to us that would be necessary to the public to exercise that right and that responsibility will in fact be made available. As for the documents which are or are not in our possession at the present time, they would be dealing with a specific site and for that reason that site not being the only site under consideration at this time, it would probably be best if we waited to release then until they would be germane to the environmental impact assessment.

MR. KENNEDY: I'm not aware that Alcan is doing studies on any other sites but the Balmoral site. Am I then given to understand that the government is doing such studies?

MR. COWAN: No. The point I made and perhaps didn't explain explicitly enough is that there are no preconditions to the negotiations. This means that there is from the government perspective no preferred site. There is a preferred site from Alcan's perspective. What we want to do is discuss that among other conditions which were set previous to our assumption of government with Alcan to negotiate with them to try to work out the best possible deal for Manitoba in respect to any aluminum reduction facility in this province. So what we are saying is that we have said that there are other sites which should be considered and we are now negotiating such considerations, among other considerations, with Alcan.

MR. KENNEDY: We would hope that our recent brief of this morning would provide you with at least some broad parameters to provide that examination of alternative sites.

MR. COWAN: I am looking forward to seeing it.

MR. KENNEDY: Are there any further questions? On behalf of the Council I would like to thank you very much for your words of encouragement, words of caution, and I think words of wisdom. We will be discussing this afternoon and certainly over the next few months your request to provide an evaluation of our activities and to provide an evaluation of where we might go in the future, not with relation to the government's structure itself but also in relation to the mandate and breadth of mandate we have with respect to environmental matters. I'd like to thank you for coming this afternoon and on behalf of Council indicate that we appreciate your attendance.

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Presented at May 14/82 Council Meeting

Cowan holding Alcan studies

By Cecil Rosner

Environment Minister Jay Cowan said yesterday Alcan's social, economic and environmental impact studies on its proposed smelter won't be released by his department until a definite site is chosen.

Cowan told the Manitoba Environmental Council's annual meeting he is committed to full public participation in reviewing such projects, but felt it would be premature to allow the public access to the documents.

"If and when a site is determined we will have full public participation in any environmental impact assessment," he said.

Cowan was responding to a resolution passed by the council calling for the government to make public the studies as soon as it receives them. The resolution also urged that the full text and appendices of the report be deposited in libraries and other locations.

Ensure scrutiny

"(This) will ensure that scrutiny of the impact assessments and preparation of briefs for the public hearings by members of the public and public interest groups will be as thorough as possible," the resolution said.

Cowan said Alcan's studies have all been conducted from the point of view of a pre-determined site. But the government's position is that there are no preconditions to the negotiations.

In passing its resolution, the council pointed out that the previous government promised last Oct. 2 that the studies would be made public as soon as they were completed. But Cowan said the new administration had altered the timetable for development of a final decision on the smelter.

LEGISLATURE

The minister said his department is currently developing new guidelines for reviewing major projects that will have potentially damaging environmental effects. It has not yet been determined whether these changes will be written into legislation or left in the form of guidelines, he said.

Cowan praised the council for the advice it has offered government in the past and for its research work. He asked council members to review their work of the last decade and develop proposals as to how the organization should function. "We will most likely be placing increasing demands on the Manitoba Environmental Council in the future," Cowan said.

Another council resolution urged the government to establish a long-range program to prevent any untreated sewage being allowed to flow into Manitoba rivers. It said Brandon dumps raw sewage into the Assiniboine River when its sewage treatment plant is overloaded, and Winnipeg allows raw sewage into the Red River about 30 times each open water season.

This practice is contrary to the Clean Environment Act, which specifically prohibits unclean or offensive materials or untreated sewage to be discharged into a body of water.

Winnipeg Free Press, May 15, 1982.

REGIONAL REPORTS

CENTRAL PLAINS

J.A. Knight

Public awareness is required for a number of concerns present in sectors of the Central Plains. These issues may sound repetitious but therefore are of more concern and important to the residents. These are the Garrison Diversion Unit and hazardous chemicals.

The issue capable of creating the most devastating damage is the Garrison Diversion Unit. If projected impacts are accurate, the increase of nitrates and other chemicals expected to contaminate existing water supplies will make the Assiniboine River unsuitable for agricultural irrigation, may have a negative effect on existing fish populations, and will require complex and consequently expensive treatment for municipal use. The economic impact of unsuitable water could seriously affect close to 1,000 jobs in the regional food processing industry. This is in addition to the result of exotic and potentially inappropriate fish species being introduced to hamper commercial and sport fishing.

The hazardous or rather inadequate means of waste handling is a problem, which in advancing technology, must be met head on. The inability to dispose of dangerous products or by-products from either commercial or agricultural businesses will only hamper future generations. Environmentally, disposal of persistent chemicals will contaminate agricultural water supplies and have a detrimental effect on municipal sewage treatment systems. Residual contaminants have an inconceivable potential of polluting ground water systems. The transportation of such dangerous materials had been fortuitous until train derailments in the MacGregor and Austin areas brought national concern over this long-standing problem. Safe handling, transportation and disposal of such toxic items are therefore a civic duty; not one to be regarded as the sole responsibility of the carrier and/appropriate agencies. Progress for the sake of progress alone without regard for the environment is not advantageous to the region. Policy should be developed to ensure that potentially hazardous material is handled in the safest manner, in the most secure containers, along the best routes possible. A provincial-wide plan should be developed and implemented to deal with such accidents.

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Circulated at May 14/82 Council Meeting

EASTERN

R. D. Howard

PEAT LAND DEVELOPMENT

Until very recently the customary method of handling overlying shallow organic soils (peat) on farm lands was to burn it off. Presently the East-Man Reg. Dev. Inc. has a contract with the Manitoba Minister of Agriculture through Agro-Man funded by the Federal and Provincial Governments, 60 and 40 per cent respectively, on an Organic Soil Project totalling $650,000 covering the five year period ending in 1984. In co-operation with government departments and farmers in the arable peat-land areas, the staff agrologist has been charged with the responsibility of demonstrating the capability of production in these soils and providing this information to the farmers. The expected positive result will be an end to the hazardous and wasteful burning practice on peats because of the prospect of successful production using recommended varieties of various crops in conjunction with water management techniques.

PROVINCIAL FOREST EXPANSIONS

A new Cat Hills Provincial Park has been created comprising approximately 15 square kilometers of highly productive forest lands in the vicinity of South Junction and Sprague. In addition, 1,618 square kilometers have been added to the Sandilands, Agassiz, Whiteshell and Northwest Angle Provincial Forests, all within the Eastern Region. This adds approximately 630 square miles to the forestry lands managed by the Department of Natural Resources.

WHITESHELL NUCLEAR RESEARCH STATION

Underground rock-testing site environmental impact reports will be filed by Atomic Energy of Canada Ltd. prior to major work commencing on the $13.9 million project. Spokesmen have advised that no nuclear waste will be deposited at the site. There will be little noise, waste or truck traffic and while similar to a mine, it will be cleaner because the rock from the shaft will not be refined. The research program will be finished by the year 2000. The public is watching with extreme interest as this project develops.

WHITESHELL PROVINCIAL PARK PLAN

Since the inception of the concept there has been much involvement by many private and government participants but to date, while many proposals have come under consideration, no final decisions have been made to formalize a policy which then might have applicability to all provincial parks. The draft Master Plan is presently in the hands of the Cabinet. It would now be appropriate to consider a road through Nopiming Park which could be travelled safely.

HAZARDOUS WASTE DISPOSAL SITES

While it is noted that the provincial site proposed by Reid Crowther & Partners Ltd. study for the Roseau River Basin is under review because of the serious concerns expressed about the area being hydrologically safe, comprising soil type and flood control characteristics adequate for the intended purpose, it has recently been revealed that the State of Minnesota is considering a site near the International Border which is in the same watershed. This would be disastrous.

RED RIVER POLLUTION

Recommendations made by the Clean Environment Commission to the City of Winnipeg to meet standards applied to the rest of the Province are just that — only recommendations. The City of Winnipeg has jurisdiction over the discharge of raw sewage and carries out, as normal operating procedures, environmentally unacceptable practices to the detriment and to the health of downstream users including market garden irrigation, recreational and particularly potable water purposes. While this has been a major concern to all those involved for many years the problem is not diminishing but escalating with the increased growth in effluent. No commentary, it seems, has yet appeared to advise the public of the possible adverse impacts by various infectious bacteria upon the commercial and sports fisheries, particularly the latter at Lockport. It is a scary prospect to observe a potential future epidemic situation in the making possibly to be visited upon many of those very people by whom it is being created. Is it not ironic that the City of Winnipeg objects so vehemently to the potential pollution of its potable water supply source from Shoal Lake — originating in the Eastern Region?

RODENT CONTROL

Some two dozen municipal corporations have joined together and recently acquired the services of a qualified person to carry out control procedures on rodents, particularly rats, in the rural areas. This problem has been a major continuing one and hopefully is now resolved.

GARRISON DIVERSION

Historically, this has been a paramount issue to Council members. It has also been an issue which has been running hot and cold as events took place in the United States between political activities and court actions. At the moment the Garrison Conservancy District has some $7 million allocated to it by Congress, which a Court Injunction prohibits it from expending to all intents and purposes. We can expect, in spite of a vote of 314 to 67 in the House of Representatives which resulted in protecting our interests, that there will be a very concerted and maximum effort by the project proponents in the early spring of 1982 to overcome the opponents present solid position and endeavour to continue the original authorized plan. Manitoba stands in an ongoing jeopardy position even with the proposed immediate establishment of a Washington office to lobby our concerns because North Dakota politicians and administrators have declared the project essential to the survival of their state.

MISCELLANEOUS

Other matters which are being monitored are ditching and agricultural herbicide and pesticide sprays, mining and timber practices, land use and water drainage and/or management, Alcan smelter, live fishbait, insect pathology infestations, road extensions north along Lake Winnipeg, wild rice policy, Dutch elm disease and Spruce budworm.

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Presented at Dec. 7/81 Council Meeting.

INTERLAKE

Bill Aitken

The threat of the Garrison Diversion Project adversely affecting water quality and the fisheries of Lake Winnipeg and Lake Manitoba remains as the main concern to Interlake residents. The administrations of North Dakota and the United States Governments have shown a great determination to get on with the project development in spite of

Canadian concerns. Government intervention on our behalf must be stepped up to discontinue this threat for all time. Private citizen opposition is gradually spreading as information about the issues is reaching environmental non-government organizations across the prairie provinces.

Ever increasing amounts of rough fish are being left on the ice of Lake Manitoba after they are caught in the nets of commercial fishermen. The demand and market value does not compensate the fishermen enough to pay for the time and fuel to haul these fish off the lake. Processing plants and stronger marketing would have the desired effect of eliminating this source of pollution and also reduce the numbers of these less valuable fish which limit the production of high quality pickerel and white fish.

Control of lake level on Lake Manitoba has been a topic of discussion with fishermen, farmers, and tourist operators, each with a different point of view. Surely a range of levels can be arrived at that will best serve all of these interests and above all protect the environment. [The Manitoba Water Commission held public hearings in 1969 and 1973 to specifically deal with the multivariate concerns pertinent to Lake Manitoba water levels. Pursuant to these hearings, the Manitoba Water Commission published a report outlining its recommendations in December, 1973. - ed.].

Caves in the Lake St. George area have recently been receiving a great deal of public attention. These caves are the only known hibernation habitat of bats in Manitoba. These solution caverns are dangerous to the unwary and unwise explorer in that it would be impossible to escape if alone and not properly equipped. A decision should be made that would provide a safeguard for this unique and valuable environment as well as for the unsuspecting visitor and the same time satisfy the inquisitive.

The impact of a world size aluminum smelter is a concern to many Interlakers that feel that harm to the environment and society may outweigh the benefits to the region. Hopefully, modern technology and adequate emission standards will enable us to have a pollution free environment and the economic benefits as well.

Residents in and around Gimli are still very concerned with the temporary storage facility for hazardous chemicals located two miles upstream from their town and beaches. While they realize that a centrally controlled collection facility is in the best interest they would hope that a less environmentally sensitive site could be used.

The Red River and Lake Winnipeg are the receivers of a large amount of raw sewage and liquid wastes from the City of Winnipeg. Communities such as Selkirk depend on this system for a large part of its domestic water supply. Knowledge of this practice does little to attract users of the lake and beaches, and tourism is very important to our economy.

A major resource in the Interlake is the vast aquifer of high quality water. This resource is constantly threatened by the presence of municipal garbage dumps located in areas where groundwater can be directly contaminated. Techincal and financial assistance as well as enforcement should be provided to eliminte this problem now that it has been identified.

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Presented at Dec. 7/81 Council Meeting

In 1982, the Garrison Diversion Unit in North Dakota remains as the number one threat to the environment in the Manitoba Interlake Region. Bans on construction have been lifted, tenders to construct the Oaks pumping station have been let, and land condemnation is underway to allow for the New Rockford Canal. Not only is a law of man, the Boundary Waters Treaty of 1909, being broken, but the breaching of the Continental Divide violates the laws of nature.

The Lake Manitoba Commercial Fishermen's Association has expressed concern about the spawning grounds for pickerel and other valuable fish species. These spawning grounds are becoming confined to Basket Creek and a few other creeks on the north end of Lake Manitoba. Reports are that many egg bearing fish are dip netted out of the creeks with the uncontrolled annual spring dipping for mullets. Conservation Officers are spread pretty thin in Manitoba, but it is recommended that extra C.O.'s be placed in the Basket Creek area at this time each year to control this serious depredation of a valuable commercial and recreational resource.

The Basket Lake area has been considered for agricultural development. Again, if this project was undertaken, serious harm would result from the loss of the valuable pickerel spawning grounds. Subsequent draining developments would eventually give way to the hydrostatic pressure of Lake Winnipegosis and that lake would be lowered toward the elevation of Lake Manitoba.

As time goes on, more and more sink pits and solution caves are being discovered and becoming lures to the curious. Concerns here are that some very amateur spelunker may come to grave personal harm, and also that man's activities around these openings in the earth's surface may introduce contaminates into the underground aquifer, the supply of the Interlake's unequalled water. It is imperative that some protective measure be effected before harm is done.

It has been reported that Leafy Spurge [*Euphorbia esula L.*], a prohibitive noxious weed, has been introduced into the Interlake Region with fill used to bolster up the railway lines. This news is alarming to the Interlake Region because of the experience with Red Bartsia [*Odontites verna*]. Red Bartsia was brought into the Gimli airbase on aircraft coming from Europe. Every year the area covered with Red Bartsia increases and is now reported as far away as Teulon, Chatfield, Poplarfield, Vidir, and Washow Bay. [There is no published documentation substantiating that Leafy Spurge is being spread in the Interlake by railway fill or that Red Bartsia was introduced via European aircraft. However, both theories are accepted by provincial Department of Agriculture Weed District Supervisors as being correct. It seems lax that these threats to Manitoba's agriculture have not been recorded - eds.]

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Presented at May 14/82 Council Meeting

NORTHERN

Chris Sundevic

In 1981, the Dept. of Northern Affairs published a report on 50 northern communities (1981 Northern Affairs Community Reports). Many communities are noted as having poor-to-inadequate sewage and garbage disposal areas; many still use outdoor pit privies. A number of houses and schools close to water lines use a lower pressure sewage system. In many areas garbage, where there is a disposal area, is being picked up on a weekly basis. This procedure is posing an unhealthy and unsanitary environment.

I am happy to see the Council once again sponsoring an environmental cartoon contest. This is something we should continue on a yearly basis, because it not only introduces the Council to the public but also brings awareness to the young people of today.

1982 is upon us and still there is the threat of a continuation of hydro-electric development in the north, again disrupting our delicate environment. We cannot afford to have another Nelson-Churchill river fiasco. One such disruption in our time is already too much.

Attempting to escape from high costs of heating, many townspeople are reverting to wood burning as a method of heating their homes. Studies done on wood burning state wood burning emits a poisonous gas (CO)that can be harmful to people when a certain concentration is reached. I propose that further studies be done during the winter months, where wood burning is of abundance.

Last February the Council broke tradition and held a Board meeting outside of Winnipeg. The Pas was the site chosen and with the aid of Mayor Bruce Unfried, the event was a success. We held our meeting during the day divided by a tour of Manfor, ending with a public meeting. Several concerns were brought to our attention by the citizens of The Pas. Laverne Jaeb was concerned about the amount of dead fish during the winter months due to a project by Ducks Unlimited in that area. Another concern expressed by the Mayor was of the railroad tracks running through the center of the city, posing problems when controversial chemicals are being transported through the city. One example was the spilled chemicals of the C.N.R. derailment near Austin which were being transported to the Sheritt Gordon mines at Lynn Lake.

In the fall of 1981 the Clean Environment Commission (C.E.C.) held hearings in several northern communities on the water quality objectives of the Grass and Burntwood river systems. To date of writing, no results were received on these hearings.*

By the time this report is read the Commission will have held a hearing in Thompson as to the prescribed limits of emissions from the Inco smelting complex in Thompson. At present the emission levels seem to be of a monetary concern, both to Inco and to the townspeople. Inco's concern is the cost of implementing more sophisticated equipment and, in a different sense to the townspeople as per Alderman Sawicki's statement of March 31/82 quoted in the Thompson Citizen, "I would be much more concerned if the smoke stoppped coming out of the stack". Their monetary concern is the continued operation of Inco.

Further on Inco, an open pit mine is presently being constructed at a site fairly close to the town site. Inco has already done some

* *Report published, see C.E.C., 1982 Report ... Grass-Burntwood Rivers ... 122 p. distributed, Jan. 83 — eds.*

extensive environmental studies on the project (Environmental Study for Thompson Open Pit; Sept., 1980, Inco Metals Co.). I would like to see the C.E.C. obtain some information and maintain an ongoing record as to the quality of the surrounding waters and atmosphere which will be affected by the operations of the pit.

In March of this year, on behalf of the Council I organized a forum in Thompson on Northern Environmental Concerns. Dr. Diane Malley, Dr. Drew Bodaly and Mr. Charles Ferguson gave exceptional talks on three important subjects: 1) Effects of Acid Rain; 2) Effects of Hydro-Electric Development in the 11 are pertinent subjects affecting us in the north. The disturbing factor was the North; 3) Mining and the Environment. Adiscouraging number of local residents that attended the forum. This response brings forth a question. Are people really interested as to what is happening to our environment and are they prepared to do something about it? Obviously, the interest is there. There needs to be more said and more done for effective changes to take place.

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Presented at May 14/82 Council Meeting

PARKLAND

Barry Wild

This summer and fall the weather cooperated to attract literally thousands of folks to partake in the festivals which are annual events in the Parkland. Coupled with the excellent fishing, hunting and camping and the scenic vistas of fertile valleys and forest-clad hills, which give the Parkland its name, this part of the province is probably visited by more non-residents than any other region of Manitoba. Environmental consequences resulting from this recreation pressure are many and truly varied. Early in November, for example, Riding Mountain National Park was gouging up weeds from the bottom of Clear Lake with a Muck hoe in an attempt to alleviate next Year's swimmers' itch problems. If this weed removal and channel deepening do not restore natural water circulation to the beach area the Park is considering other methods to achieve this end, such as employing large pumping equipment. The weed growth in Clear Lake, which contributes to the discomfort of swimmers, is caused in large part by the abundance of those swimmers and other Park visitors and the consequent enrichment of the water. Access highways, such as the Yellowhead Route have been widened and resurfaced, making it easier and pleasanter for those driving to their vactions. This has permanently removed substantial amounts of prime agricultural land from production of food.

With good fall weather and the consequent rapid harvest there have been fewer than half the claims for compensation for waterfowl crop damage this year than last. Hybrid varieties of both silage and grain corn have made their appearance in the southern extremeties of this "northern fringe" growing area. Though corn is difficult to surpass for its feed value and though the sight of a crop being combined in November is certainly unusual, there are associated hazards to be regarded. Corn is a heavy feeder and is normally grown with extensive use of chemical fertilizers. It is also extremely sensitive to significant yield loss, with even minimal weed competition, hence the extensive use of chemical herbicides. Corn is also credited with contributing to top soil erosion rates which are truly devastating in the "Corn Belt" areas of the U.S. Finally, on the agricultural scene, excessive bush clearing and prevalent cultivation practices which till and loosen soil right into the top edge of highway ditches has resulted in serious, and highly visible, top soil erosion. This loss of production capacity is even more serious, than the black filled ditches and town streets would indicate. Valuable nitrogen is bound to the lighter soil particles and organic matter, the materials most subject to wind erosion. By analysis, a typical sandy loam field contained 23 ppm of nitrogen while the soil in the nearby ditch showed 108 ppm. A heavy clay soil recorded 24 ppm while the eroded soil piled up in the adjacent road-side ditch contained 190 ppm of actual nitrogen.

Changes to the Wildlife Act shifting responsibility to hunters to obtain landowners' permission before entering upon private land has had a noticible effect this fall. The "No Trespassing" signs so revered by some hunters for their target practice need no longer be posted and, perhaps as a result of the legal requirement to respect property, there would seem to have been fewer fences cut, gates left open, or vehicles being driven across crops.

Several views have been expressed for the salvation of Dauphin Lake from what will otherwise be its almost certain demise. This has become almost a "motherhood" issue with area residents and yet there is, at this time, no viable consensus which will satisfy farmers, fishermen, wildlife enthusiasts, cottages, and those responsible for the bill.

The "Dauphin Herald" advised its readers that the sentinel chicken flock tested negative for Western Equinine Encephalitis, and the Dauphin area would not be sprayed with Baygon. A decision the day after publication resulted in the arrival of the spray planes, no doubt to the chagrin of the large honey producers thus affected and to many others as well. From personal observation a couple of days after the spray was applied there seemed to have been no effect whatsoever on the annoyingly large population of mosquitoes within the town itself.

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Presented at Dec. 7/81 Council Meeting

Last Fall a group of cattle ranchers near Minitonas applied to the Department of Natural Resources for permission to live trap 50 elk from their range in the Duck Mountains. After public meetings and the offer to utilize the original 50 solely as breeding stock, returning an equal number to the wild in five years, the Department granted that five could be captured for this experimental project in domestication and none need be returned.

The state of the much beleagured Lake Dauphin may improve in the foreseeable future. In his inaugural speech in the Legislative the newly elected MLA for Dauphin, John Plohman, demonstrated a keen grasp of the causes and dimensions of the Lake's quandary and also offered specific proposals to alleviate those problems.

This past winter has been the second consecutive year of minimal snowfall in the Parkland. Stubble fields were able to retain a scant few centimetres but fall fallowed land was completely black and suffered wind erosion of top soil all winter. With the absence of a normal insulating blanket of snow the rivers froze very deeply and either had severely restricted flows or they stopped flowing entirely. This had profound effects on livestock producers, overwintering aquatic life, and even a number of towns, such as Gilbert Plains and Ste. Rose du Lac, which instituted water rationing in an attempt to avoid depletion of their respective reservoirs. Cross country and downhill skiers were none too enthusiastic either.

Dauphin's stately elm trees are disease free and with the town's extensive pruning and trimming program it is hoped that Dutch Elm Disease will not be able to make any inroads.

Larry Williamson still has plans to establish a permanent, world-class, game farm for his animals in the Parkland area. After limited success with Dauphin, Brandon and Neepawa he is presently working with a group of citizens from Grandview and seeking provincial funding assistance for the fulfillment of that dream.

At the beginning of the year the Manitoba Wildlife Federation began meetings with native groups in the province to discuss uncontrolled hunting of big game on Crown Land by status Indians. Early in April a Garland resident witnessed Indians, in the Duck Mountains, butchering three cow moose still carrying four unborn calves. Just because this was a legal activity does not render it in the long term interest of either the individuals or the continuance of the target species.

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Presented at May 14/82 Council Meeting

PEMBINA VALLEY

Betty Pawlicki

Another year has past and still the Garrison Diversion project looms as a major environmental concern. The establishment by the Manitoba government of an office to deal with Garrison concerns is a positive move. The Action Committee Against the Garrison must be commended for the work they have done and undoubtedly will continue to do in monitoring this issue. The position that Manitoba must not receive any Missouri water, that the Lonetree is a breach in the continental divide, should be supported throughout Manitoba.

A hazardous waste disposal site, under consideration in Minnesota would be located in the flood plain on the Red River. This could create problems of seepage and further problems in floods for areas bordering the Red River. A site that is near the Canada - U.S. border is a possibility.

A three year drought-proofing study of the South Hespeler Region is in progress. This is being done under a Federal-Provincial agreement under the Prairie Farm Rehabiiitation Administration (P.F.R.A.) and will look at water management in the area.

The February issue of the Renewable Energy News (Ottawa, Vol. 4, No. 11) highlighted the possibilities inherent in the Jerusalem Artichoke for biomass energy. A new variety called Columbia has recently been released by the Morden Research Station. Tubers are still

available there, for interested parties. This adaptable plant also has the capability for high fructose production. The Jerusalem Artichoke does not require prime farm land, is frost tolerant and disease and insect resistant.

The Morris area was the site of a spill of crude oil in March from the Winnipeg Pipeline Co.'s feeder pipe. The site of the spill was one and one half miles west of Morris. Crude oil that could be salvaged was trucked to Winnipeg. The remainder was burnt off in holes in a field adjoining the leak. Contaminated snow and residue was removed to the Lowe Farm refuse grounds. Since Morris is located in the flood plain, the area will be monitored until the end of the spring run-off.

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Presented at May 14/82 Council Meeting

82001, Karen O'Byrne, Winnipeg.

COMMITTEE REPORTS EDUCATION

Ron Phillips

The Environmental Education Committee had monthly meetings from September 1981 through to May 1982. The Committee consisted of a blend of new and previously experienced committee members.

A detailed examination of the Study 13, 1979 Report entitled "Environmental Education: Hope for the Future" resulted in the development of a brief recommending the development of Environmental Education Literature Checklist.

Committee meetings through the year involved:

1) Coordinating a province wide cartoon contest;

2) Listing and priorizing potential committee briefs;

3) Reviewing past Environmental Education Briefs with the intention of updating and modifying past briefs;

4) Examination of Environmental Education from K - 12 in Manitoba schools (see Table 2).

5) Development of an Environmental Education Committee Orientation Kit for new members to the committee.

The members of the Environmental Education Committee are: Ron Phillips, Chairman, Harold Driedger, Yong-Cha Cho, Ruth Corobow, Wayne Neily and Jennifer Shay.

* * *

Presented at May/82 Council Meeting

Table 2 Summary of Environmental Education in Manitoba Schools.

Grade	Topic Areas
K	Interdependency and interaction among organisms. Characteristics of plants and animals.
1.	Identification of living and non-living structures. Examination of characteristics of living and non-living objects.
2.	Classifying of organisms according to properties. Study of response of living organisms to external stimuli.
3.	Population growth and development in different environments. Examination of communities and identification of different populations within a community.
4.	Interaction of populations including study of feeding levels, predator-prey relationships and food chains.
5.	Adaptations of plants and animals in their environment.
6.	Population interactions within the environment which includes the study of competition, territorialism, density and human influences.
7.	Environmental Science - plants and photosynthesis.
8.	Environmental Science - microbiology.
9.	Environmental Science - terrestrial ecology. Comprehensive unit consisting of the study of: a) biotic and abiotic components; b) population relationships; c) habitat, niches, saprophytism and scavenging; d) bioenergetics, succession, sampling populations; e) biogeochemical cycles; f) human impact on ecosystems; and g) effect of pollutants on primary producers.
10.	Population studies in Physical Geography course.
11.	Basic Ecology - Biology 200 option (to be eliminated by 1983). Review of basic ecology and emphasis on terrestrial or aquatic ecology.
12.	New Biology 300 curriculum will include an option (10 hours) on Environmental Issues (eg. Garrison Diversion Unit and/or Acid Rain). Geography 300 deals with human populations with environmental impact.

Brief: List of Manitoba Environmental Publications

RECOMMENDATION

The Manitoba Environmental Council recommends to the Minister that all current environmental publications, related to the Manitoba environment, available through the federal, provincial and municipal governments, university institutes, private organizations and industrial sectors be listed

in a semi-annual pamphlet. Co-ordination of the publications and distribution of the pamphlet should be by a concerned government department such as the Department of Education, or Department of Natural Resources.

BACKGROUND

There is concern in both the private and public sectors regarding the noticeable lack of co-ordinative action in the various environmentally related agencies. One method to improve co-ordination would be the regular issuance of a single publication listing the environmental literature available from these agencies. Study 13 (1979) of the Manitoba Environmental Council "Environmental Education: Hope for the Future" echoes this exact concern about the lack of information available to any concerned environmentalist. A semi-annual publication listing recently published environmental literature would certainly inform the uninformed, minimize research duplication, and finally facilitate a cross-pollination of thoughts and ideas related to all environmental aspects.

Environmental Education Committee

Ron Phillips, Chairman

Approved, May 14/82 Council Meeting

ENERGY

Lewis McCall

During the fall of 1981, the Committee held 4 meetings and produced a Brief to the Minister. The Brief - adopted by the Council at the Fall Meeting - dealt with Manitoba Hyrdo electricity pricing in general, the sale of equity in a power station to Alcan, the pricing of power to the Western Grid and Alcan and the hydroelectric planning process in Manitoba.

During the first few months of 1982, the Committee met twice. Topics raised for consideration includes the Burntwood River Hydro Development Studies, advocacy of a Renewable Energy Future for Manitoba and the funding of public participation in the energy planning process. None of these topics were ready for presentation as briefs in time for this Annual Meeting. It is hoped to develop briefs in these subject areas next year.

I thank those Committee members (Aitchinson, Corobow, Emberly, Humphries, Kelly, Lansdown, Ridd, Ross) who participated in meetings during the year.

* * *

Presented at May 14/82 Council Meeting.

Brief: **Manitoba Hydro Resources**

RECOMMENDATION 1:

The Manitoba Environmental Council recommends to its Minister that the Manitoba Government develop an electricity pricing regime in Manitoba based, to a greater degree, on the real cost of electricity provided from new generation facilities. The new pricing regime should be developed in the context of a comprehensive review of the current average cost pricing mechanism. Steps should be taken to ensure that the new rates do not unduly burden those least able to afford them.

RECOMMENDATION 2:

The Manitoba Environmental Council recommends to the Minister that the Manitoba Government make arrangements for the hydroelectric planning process to be opened to public scrutiny and input from its earliest stages. Such scrutiny and input should not be limited to elected representatives but should include public interest groups and individuals.

RECOMMENDATION 3:

The Manitoba Environmental Council recommends to the Minister that the Manitoba Government give consideration to the effect on the cost of power to Manitobans before agreeing to sell equity in a power station to Alcan or committing itself to supplying power to a Western Grid.

RECOMMENDATION 4:

The Manitoba Environmental Council recommends to the Minister that:

a) if an investor (e.g. Alcan)is granted the right to participate in the ownerhip of a hydroelectric power station in Manitoba, that the station be a new station to be constructed at an available northern site. It further recommends ownership should be related to the power station's capacity in the following manner: the net power requirement of the investor - expressed in terms of capacity - be grossed up by the capacity necessary to cover the transmission losses, the power reserve capacity normally required by Manitoba Hydro and the relevant share of theoretical

capacity related to the capacity factor of the station. The total capacity thus derived should then be related to the theoretical capacity of the station to determine the company's share of the ownership, power entitlement, and capital and operating costs. Capital costs should be defined to include the power station and related structures to protect the environment, relevant transmission facilities, relevant costs of Native land claims settlements, and a share of the Churchill River Diversion costs, if the plant is downstream from the diversion.

b) in the event of an electricity generation shortfall, said shortfall should be divided between Manitoba Hydro and Alcan in accordance with their respective equities in the power station. Further, it recommends that in such an event, system power should be supplied to Alcan at the full hydroelectric rates prevailing at the time of purchase or the full cost of required imported power.

RECOMMENDATION 5:

The Manitoba Environmental Council recommends to the Minister that any power supplied to a Western Power Grid be sold at the full cost to Manitoba of generating and supplying the power.

BACKGROUND:

On April 20, 1981, a Letter of Intent was signed between the Manitoba

Government and the Aluminum Company of Canada. The provisions of this letter called for, among other things, the sale of equity in a power station to Alcan and a guarantee of electricity at a rate to be determined. Questions arose in the minds of the public regarding the proposed sale of equity in a power station and the possibility of rate subsidies.

At the same time, negotiations regarding a Western Power Grid were underway. Similar questions arose with respect to the possibility of supplying power to the Grid at a rate below its production cost.

Because certain questions related to both proposed projects are of a similar nature, we have chosen to integrate the BACKGROUND explanation of the Committee's recommendations.

A cursory review of the current situation in Manitoba disclosed that power sold at average cost in Manitoba was considerably below the cost of power produced at recently constructed generating facilities and would be even further below the cost of power generated at stations not yet constructed.

It would appear that the average cost pricing regime was developed at a time when the cost of power from new facilities was, or appeared to be, falling and it was widely believed that increases in generation capacity would automatically produce lower unit costs of electricity. In such circumstances, the average cost mechanism would have been considered necessary to protect Manitoba Hydro from undue pressure to lower its rate to the point where it would lose money.

Today, however, the cost of electricity produced at newly constructed facilities is above the average cost and rising. Indeed, this has been the case for several years. In the current situation, the average cost pricing mechanism operates at cross-purposes with the stated intent of the Manitoba Hydro Act "to promote economy and efficiency in the generation, distribution, supply, and use of power." Indeed, the current pricing mechanism encourages expansion and waste through the illusion of inexpensive electricity — electricity that is sold at less than the cost of producing it. (For the year ended March 31, 1981, Manitoba Hydro lost $16,268,000. While this has been attributed to drought conditions, the loss does not include foreign exchange losses that were absorbed by the Manitoba Government or the continuing and, as yet undetermined, costs associated with the destruction created by the flooding of Southern Indian Lake.)

The dilemma posed by the demand that Alcan be charged a reasonable price for electricity arises from the fact that all other consumers in the province are paying an unreasonably low rate. To charge Alcan an appropriate rate for electricity could be construed as discriminatory pricing.

Similar problems seemed to be inherent in the proposal to supply power to a Western Grid.

To avoid both the problem of discriminatory pricing practices and the promotion of system expansion to provide electricity at a rate below its cost of production, we have developed the recommendations regarding the general pricing regime and the pricing of electricity sales to Alcan and the Western Grid.

In making these recommendations, we are cognizant of the fact that this will be somewhat of a bitter pill for Manitobans to swallow. However, we believe that the longer these difficult decisions are avoided, the greater the financial burden that will ultimately be borne by Manitobans both in their electricity rates and in their taxes.

With respect to the matter of private participation in the ownership of a power station, the Committee has not addressed questions of ideology. Rather, we have restricted our recommendation to an attempt to outline an equitable formula for the distribution of costs and power rights in the event that an agreement of sale is pursued.

The recommendation regarding public participation in Manitoba Hydro's planning process relates to the need to explore all possible options with respect to various courses of action and to the fact that it is in the policy and planning stages of development that future rates are determined. Only through participation at this level can Manitobans exercise any semblance of real control over the utility. After expenditures have been incurred "rate regulation" is little more than a formality.

In summary, we believe that the recommendations proposed by this committee would, if accepted by the government, help lay the groundwork for the efficient allocation of the Province's hydroelectric resources and their financially sound development. Simultaneously, the true value of conservation as an energy source would become apparent.

* * *

Energy Committee
Lewis McCall, Chairman

Approved, Dec. 7/81 Council Meeting

Boost in rates urged

By Ritchie Gage

The Manitoba Environmental Council says the provincial government should boost the cost of electrical power to Manitobans based on the cost of new generating facilities.

In a brief endorsed at the council's annual meeting yesterday in Winnipeg, the council's energy committee said Manitoba Hydro is losing money at an alarming rate and Manitobans should pay more now to avoid sudden increases in electrical rates and taxes later.

'Bitter pill'

"In making these recommendations we are cognizant of the fact that this will be somewhat of a bitter pill for Manitobans to swallow," the brief said.

"We believe that the longer these difficult decisions are avoided, the greater the financial burden that will ultimately be borne by Manitobans in their electricity rates and in their taxes."

The energy committee said the average cost of power sold by the utility is considerably below generating costs at the province's newest power stations. It will fall far below the cost at Limestone generating station or other plants which may be constructed in the future, it added.

Costs rising

"It would appear that the average pricing scheme was devised at a time when the long-run cost was, or appeared to be falling, and it was believed increases in the sources of electricity would lower the price," the brief said.

However, generating costs are now outstripping consumer rates which were frozen by the former Conservative government until 1984. The committee said the current cost-pricing structure "encourages expansion and waste through the illusion of inexpensive electricity sold at less than the cost of production."

Alcan's share

The council also said Alcan's ownership share in a future Manitoba power plant should be based on the percentage of the plant's capacity used by its proposed smelter in the Balmoral area.

The committee also said Manitobans are paying an "unreasonably" low rate for power and to charge Alcan a higher rate for electricity would be highly discriminatory.

On the proposed western power grid, the committee recommended that any power supplied to the grid should be sold at the full long-run cost of new power generated by the Manitoba Hydro system.

Winnipeg Free Press, Dec. 8, 1981.

ENVIRONMENTAL CHEMICALS

Diane F. Malley

The possibility of aluminum production on a large scale in Manitoba, based on the availability of dependable hydroelectric power, prompted this Committee to give first priority this year to effects of aluminum smelting on the environment and on human health. The Government of Manitoba and the Aluminum Company of Canada (Alcan) agreed to consider the possibility in a letter of intent dated 20 April 1980. On 2, July Alcan announced it was searching for a suitable site in the vicinity of Winnipeg and on 23 September, announced a preferred location in the R.M. of Rockwood. Effects of emissions (fluorides, polyaromatic hydrocarbons, sulfur dioxide), impact of water demand by the smelter on the underlying aquifer, workplace safety and health of local residents were some of the areas considered by the Committee. Fluoride emissions were eventually judged to be the aspect of smelter operation most likely to produce detrimental effects on the environment. The Committee arranged for a briefing of the Council by Alcan on 28 September, and on 23 February, met with representatives of Alcan and the consulting firm carrying out the environmental impact assessment. Information which the Committee recommended be known before the Government decides whether to invite Alcan to site a smelter near Winnipeg was outlined in a brief adopted at the fall meeting of the Council, 7 December, 1981. As the Council's year closes, conclusions on the possible effects of the smelter reached by the Committee, without the benefit of studying the environmental impact assessment to be completed shortly, will be transmitted through M.E.C.'s Chairman to the Minister by letter. A brief urging immediate release to the public of the environmental impact assessment carried out by Alcan's consultant, as soon as it is in the hands of the government, is presented for consideration today.

The Committee's efforts in exploring environmental effects of aluminum smelting were aided considerably by a research assistant, Meredith Lamb, hired on contract for five weeks ending 31 March 1982. Ms. Lamb collected relevant literature, researched selected topics and produced an annotated bibliography which is presently being prepared for distribution. Although use of funds was approved by the Board on 4 November, the contract, to be of three months duration, did not receive ministerial approval until late February. To make full use of the funds allocated and be of maximum benefit to the council, awarding of contracts must be timely. The Committee recommends, therefore, that the Board explore means by which its contracts can receive approval without long delay.

The second area of interest to the committee was insect control programs in and around Winnipeg involving the use of pesticides. This Committee presented a brief on this topic at the public hearings held by the Clean Environment Commission (May 12-14, 1982) on various mosquito control programs in use in the province.

Thirdly, the committee identified environmental monitoring programs in Manitoba as a topic for further study. This committee has long been interested in management, disposal and transport of hazardous chemicals and chemical wastes. It organized a Forum on Hazardous Chemical Wastes on 1 December 1980, at which an inventory of hazardous wastes in Manitoba was described. A summer student assigned to this committee by S.T.E.P., Arlene Tomkins, will compile information on monitoring programs carried on by government and industry, attempt to reconcile the environmental monitoring with the inventory of wastes, and will assist the committee in attempting to identify priority areas where additional monitoring is needed.

Efforts were directed towards two other areas. Greater prominence of environment impact assessment in planning, assessment and execution of major projects in Manitoba was urged in a brief adopted at the 7 December meeting. Secondly, a brief was presented at the Clean Environment Commission's hearings on 4 May, 1982, on the limits for the discharge of contaminants into the atmosphere by the smelter complex of Inco, Thompson Ltd. A brief urging that the government give more attention to the study of the long range transport and deposition of air pollutants is presented for consideration today.

The committee met four times during the year. I thank those members who were active during the year either by attending meetings or critiquing our briefs.

* * *

Presented at May 14/82 Council Meeting

Brief: Environmental Impact Assessment of Major Economic Projects in Manitoba

RECOMMENDATION:

The Manitoba Environmental Council recommends to the Minister that environmental impact assessment be conducted simultaneously, and given equal prominence, with all other feasibility studies concerning major development projects in Manitoba. Further, that comprehensive environmental monitoring be conducted during the construction, entire operation and dismantling phases of projects. Guidelines for the preparation of the environmental impact statement (EIS) should be published and subject to input from the scientific community and to public scrutiny before initiation of those studies and the EIS should be subject to independent scientific review.

BACKGROUND:

The purpose of environmental impact assessment is to ensure that projects or activities are assessed early in their planning before any commitments or decisions have been made. The environmental impact assessnemt process is the only tool, at present, by which the environmental impacts that will result from a project can be predicted, judged and, therefore, found acceptable or unacceptable. Ecological, physical, chemical and biological processes are in operation in the natural environment and are equal realities with economics, social considerations, logistics, and so on. Failure to incorporate the environmental realities into planning invites the risk that the environmental impacts will be undesirable or unacceptable and/or raise public objections. Two notable examples of such failures are the dilemma of spraying for spruce bud worm in New Brunswick and the phenomenon of acid rain in Canada and the U.S., the latter resulting from the erroneous assumption that the atmosphere is a near-infinite sink for wastes.

In the case of the proposed aluminum smelter in Manitoba, criteria for selection of a suitable site did not appear to include environmental criteria. The significance of this omission at this stage is that the company, the government and the public will have no means of assessing whether the proposed site is the "best" when all the relevant factors are considered together. Moreover, becuse Alcan has not advanced its "second best" site for environmental testing and public scrutiny, the Government of Manitoba has to decide on the acceptability of the smelter with no feasible site alternatives.

Environmental Chemicals Committee
Diane F. Malley, Chairman

Approved, Dec. 7/81 Council Meeting

Brief: Environmental Information Re Aluminum Reduction Plant

RECOMMENDATION:

The Manitoba Environmental Council recommends to the Minister that prior to the proposed signing of a Main Agreement and Joint Venture Agreement between the Manitoba government and the Aluminum Company of Canada (Alcan), as referred to in the Letter of Intent between Province of Manitoba and Aluminum Company of Canada Limited, dated 20 April 1981, information as described below be obtained and made available to the public either through the efforts of the appropriate government agencies or to be supplied by Alcan:

1. **Environmental monitoring:**
   a. The nature of the background environmental studies proposed to be conducted in the time interval between the signing of the Main Agreement and the initiation of plant operation. Of particular interest are those studies which would provide information on year-to-year variation in such aspects as vegetation distribution and growth patterns, land use, wildlife populations and movements, groundwater quality and quantity in the area impacted by the smelter operation and its emissions.

   b. The nature (monitoring sites, parameters to be monitored, methods, periodicity of sampling) of the environmental studies and monitoring to be conducted during the construction and the operation phases of the smelter by Alcan and by the government.

   c. Availability to the public of these data from monitoring.

2. **Emissions:** chemical nature and quantities of emissions predicted to be released from the smelter at the start of operations and at peak operation, including gaseous and particulate fluoride, total particulates, sulfur dioxide, hydrocarbons including benzo-a-pyrene, carbon dioxide, carbon monoxide and other measurable components.

3. **Specific behaviour and effects of emissions in this region:** specific modifications which the climate in this region may have on the behavior and effects of fluorides in the environment predicted from other geographical areas and latitudes. For example, will seasonal weather patterns affect the geographical area in which the gaseous fluoride will fall out or affect the half-life of fluoride in the atmosphere? How will snow cover and spring snowmelt affect the input of fluorides to soil? How will the short growing season alter the rate of uptake and accumulation of flourides by vegetation? How will the seasonal patterns of growth, reproduction, migrations and other physiological functions of wildlife and aquatic life in this region affect their exposure to and uptake of fluorides?

4. **Contingency plans:** back-up or alternate pollution control equipment procedures to be used in the event of a failure in the scrubbers, an accidental leakage during operation or during maintenance of scrubbers to ensure early detection and control of any abnormally high levels of emissions.

5. **Human health effects:** proposed plans to explore possible long-term health effects from fluorides (and other emissions significant to health) on the populations within the fluoride fall-out area.

6. **Updating of environmental controls:** plans on the part of Alcan to update pollution control equipment in the proposed smelter as technological improvements become available.

BACKGROUND:

Guidelines for the environmental impact assessment on the proposed Alcan aluminum smelter were released in September, 1981 by the Aluminum Smelter Impact Study Group. The above recommendations deal with two aspects of the environmental impact assessment process: the need for predicted impacts (a) to be based on data specific to the proposed site of the smelter and to the region to be impacted by its emissions, (b) to take into account variability in the environment, both seasonal and year-to-year.

Environmental impact studies were begun no earlier than September 1981 and reports on these studies currently are due to be submitted to the government by January 1982. Considerably less time has been allotted to providing background data on and assessing effects on the environment of 50 to 60 years of smelter operation than has been allocated to economic and logistical studies. The environmental impact studies presently appear unlikely to involve site-specific data collection on such factors as local climate and hydrology, flora and fauna, specific air and water sheds of the proposed site during one full annual cycle. One full annual cycle of field study should be augmented in the impact assessment with known or extrapolable data to take into account at least a 20 year cycle of natural variability.

Environmental Chemical Committee

Diane F. Malley, Chairman

Approved, Dec. 7/81 Meeting

Brief: Public Release of Impact Assessments on Proposed Alcan Smelter

RECOMMENDATION:

The Manitoba Environmental Council recommends to the Minister that coincident with official acceptance of the environmental and socio-economic impact assessments on the proposed Alcan aluminum smelter, he release these documents to the public or permit Alcan to release them. We urge that the full text and appendices of the reports as well as the summary report be deposited in libraries and other locations so that the public and public interest groups have free access to them.

BACKGROUND:

The Government stated in a news release on October 2, 1981 that the impact studies and the government review will be made public as soon as they are completed and that public participation in the review process is encouraged. Alcan also views public participation as integral to the possible establishment of a smelter. Implementation of the above will ensure that scrutiny of the impact assessments and preparation of briefs for the public hearings by members of the public and public interest groups will be as thorough as possible.

Environmental Chemicals Committee

Diane F. Malley, Chairman

Approved, May 14/82 Council Meeting

Brief: Long-Range Air Pollutants

RECOMMENDATION:

The Manitoba Environmental Council recommends to the Minister that the Government of Manitoba increases its efforts to develop a better understanding of and recommendations to control long-range transport and deposition of air pollutants. These efforts should continue to be in cooperation with federal agencies or departments, other provinces and industries which contribute major quantities of air pollutants to Manitoba's atmosphere. Efforts should focus on all aspects of the atmospheric cycle of pollutants: emissions, dispersion, transport, chemical and physical transformation, and effects on aquatic and terrestrial ecosystems.

Council specifically recommends:

a) the establishment of additional CANSAP (Canadian Network for Sampling Precipitation) sites to provide average monthly composition of precipitation and the establishment of APN (Canadian Air and Precipitation Monitoring Network) sites, to measure atmospheric as well as precipitation concentrations of collected pollutants.

b) the establishment of additional sites for the measurement of sulfur deposition in and outside of Manitoba from sources within the Province, and additional studies on effects of sulfur deposition on soils, forests, wetlands, aquatic life and on human health.

c) the funding of more studies on the dispersal and deposition of airborne metals and icularly those most likely to be volatilized (possibly other trace elements, partmercury, arsenic, cadmium and zinc), the effects of metals on soils, forests, wetlands and aquatic life, and the dispersion of metals with time away from sites of accumulation.

BACKGROUND:

The emission into the atmosphere of large amounts of oxides of sulfur and nitrogen has been conclusively linked to increase in acidity of precipitation and to the acidification of ecosystems, particularly freshwaters overlying the Precambrian Shield. The acidification phenomenon in North America alone affects, to varying degrees, $5 \times 10^6 km^2$ in eastern Canada and the north-eastern United States, and various areas of the western and southern portions of the continent. Dramatic biological changes in aquatic or terrestrial systems may occur over ten years or require hundreds of years depending on the sensitivity of the system and rate of acidic deposition. Recommendations on long-range transport of air pollution from the 5th Joint Meeting of the Canadian Environmental Advisory Councils, June 15-18, 1980, St. Andrews, N.B., were adopted at this Council's annual meeting, May 8, 1981 and forwarded to the Minister.

The Council commends the Government for its collaborative efforts to date on long-range transport of air pollutants, such as its membership on the Joint Consultative Committee Transboundary on Movement of Air Pollutants and its joint studies with the Canadian Forestry Service. Nevertheless, the Council recognizes that the phenomena of transport and deposition of air pollutants are complex.

CANSAP data from four sites indicate that precipitation in Manitoba is either not acidic or only slightly so. Nevertheless, there are not enough sites to monitor precipitation over the entire province, nor have the sites been operating the decade or more required to indicate trends in acidity of precipitation. There are presently no APN sites west of Ontario. An APN site is proposed at Cree Lake, in north central Saskatchewan. The nearest APN site to Manitoba is at the Experimental Lakes Area, near Kenora, Ontario.

Large amounts of sulfur dioxide are released annually into Manitoba's atmosphere. If the approximately 660,000 metric tonnes (730,000 tons) of sulfur dioxide allowed to be emitted in Manitoba in one year were collected together, they would occupy a space more than 1/2 kilometer (1/3 of a mile) on each side. The deposition of large amounts of sulfur compounds warrants study, even if this does not contribute significantly to the acidity of precipitation. A large proportion of the sulfur reaching ecosystems is deposited dry. Acidification of ecosystems is more closely correlated with total sulfur deposition than with the acidity of the precipitation.

Associated with the sulfur dioxide emissions produced by smelters are tons per day of particulates containing heavy metals. These tend to be deposited and accumulate more closely around the point sources than do the sulfur compounds. Unlike the sulfur compounds, which are part of the biogeochemical sulfur cycle and which are integral constituents of living material, some metals are toxic to living organisms if taken up in greater than trace amounts. The removal of metals from sites of accumulation depends upon physical removal in water or by soil erosion. Accumulations of metals will remain at smelter sites long after the smelter has

ceased operation. The gradual accumulation of metals should be monitored carefully to give early warning of build-up to dangerous "threshold" levels.

Study of long-range transport in Manitoba can potentially contribute to current knowledge in several important ways. The third and fourth largest point sources of sulfur dioxide production in Canada, based on current license limits, are in Manitoba. These sources emit into an atmosphere which appears to have considerable buffering capacity, probably due to calcareous dust. Thus, these emissions offer a unique opportunity to study the fate of large, known amounts of sulfur dioxide emitted into a relatively clean atmosphere. Since there are only two major point sources of sulfur dioxide in Manitoba, these can be more readily traced than in areas of multiple emissions. Relationships between air mass characteristics, chemical and physical transformations of the sulfur dioxide and deposition of its products can be studied in an atmosphere which possesses considerable ability to avert the formation of acidic precipitation.

The proposed Alcan aluminum smelter will possibly release as much as 500 kg of gaseous hydrogen fluoride into the atmosphere per day. It is essential that the Government have the capability to assess in advance the immediate range dispersion patterns of this fluoride and to estimate deposition patterns. If the smelter goes into operation, it will be essential to monitor actual dispersion, transport, transformations and deposition of fluorides.

Environmental Chemical Committee

Diane F. Malley, Chairman

Approved, May 14/82 Council Meeting

Brief: Smelter Licencing for Inco Metals Co.

[The following brief was presented by Dr. Diane Malley, on behalf of the Environmental Chemicals Committee, to the Clean Environment Commission hearings on May 4, 1982 - eds.]

RECOMMENDATIONS

Considering information in several documents prepared for this hearing, the submission from Inco Metals Company[1], the Inco Thompson Environmental Program report[2], and the report of the Environmental Management Services[3], as well as the general scientific literature, the Environmental Chemicals Committee of the Manitoba Environmental Council recommends the following:

1. an immediate reduction in the maximum allowable daily emission of SO_2 by 10% to 1125 short tons SO_2 per day
2. that a target maximum emission level of 625 short tons SO_2 per day be set for a date in the 1987-1990 period
3. an immediate reduction in the maximum allowable emission of particulates by 50% to an average of 7 short tons per day
4. that the particulate emission be limited on a monthly rather than a daily basis, i.e. that particulate matter be limited to 210 short tons per month, provided that particulate emissions at no time exceed air quality standards
5. that Inco contribute to studies which collect new information and examine existing data on dose-response relationships between emission of SO_2 and metal particulates and the effects of these emissions on the forest, bog and aquatic ecosystems receiving these contaminants.

BACKGROUND

From a solely environmental viewpoint, the only acceptable situation is virtually complete containment of pollutants at source. Nevertheless, disposal of waste by industry into water and air is an historical and present-day reality which is both technically-convenient and economically- beneficial to industry.

The environment has the apparent ability to absorb quantities of certain contaminants with unmeasurable or minimal injury. The principle on which this brief is based is that the emissions allowed to be produced from a long-term source such as Inco's Thompson smelter be determined by the ability of the receiving environment to absorb the pollutants with minimal injury.

Damage to Manitoba's environment is a cost to its citizens even for those environments which are presently remote from population centres and which generate little income. Reduction of emissions at source is normally paid by industry through increased capital and/or operating costs. Industry costs are generally large, precisely estimated and immediate while the costs to the citizens are imprecise, include opportunity and aesthetic loss, and have a large future component. This makes the calculation of relative costs of alternative waste disposal strategies more difficult but does not detract from the impor-

tance or urgency of this type of comparison by decision-makers. Knowing and making use of the capacity of the environment to tolerate some degree of waste addition is thus of economic value to both citizens and industries.

Inco, Thompson already recognizes the value of using envirionmental parameters to determine smelter operation as evidenced by its institution of voluntary emissions reduction program, V.E.R.P. The program continuously assesses the meteorological conditions to determine the quantity of SO_2 which can be adequately dispersed[1]. Smelter operation is adjusted so that dispersion of the emitted SO_2 maintains local SO_2 atmospheric levels below 0.34 ppm. Essentially this committee recommends an emissions control program based on the same principles as V.E.R.P. but with the following modifications:

1. the entire receiving environment is considered, i.e. forest, bog and aquatic systems, as well as the receiving atmosphere
2. metal particulate emissions be controlled as well as SO_2
3. reduction in SO_2 emissions be achieved more by sulfur containment and less by reducing smelter production
4. the time scale is greatly lengthened.

Although environmental monitoring studies of the Thompson vicinity were begun in 1958[1], dose-response relationships between SO_2 emissions and biological response were not well understood. Average daily SO_2 emissions have varied from 800 to 1000 tons per day between 1962 and 1968, 1300 to 1550 tons per day between 1970 and 1975 and have declined to 600 tons per day from 1975 to 1981 (Fig. 5, Ref. 1). The emissions since 1976 are expected to have been locally less damaging per ton emitted than previously because of the better dispersion associated with V.E.R.P. Association of particular degrees of damage to trees or lower plants with various levels of SO_2 emissions is not readily made from Ref. 1, 2 and 3. Nevertheless, the following are reported:

1. that moderately extensive injury to vegetation by SO_2 and/or particulates occurred before mid-1975 (Blauel and Hocking, 1974 in Ref. 3; also Ref. 2)
2. surveys performed in 1977 showed improvement in extent of damage to lichen and moss populations and little present acute injury to higher plants[3].
3. recent damage during 1976 to 1978 to trees (black spruce) caused by SO_2 was mostly restricted to within 3 km of the stack.

In a previous brief, to the Municipal Board of Manitoba on May 4, 1976, the Environmental Chemicals Committee recommended a reduction of 50% in the permitted SO_2 emission level from 1250 to 625 tons per day. In fact, emissions have been 630-670 tons per day between 1978 and 1980[1] due to low demand for nickel. Even at the targetted level of 625 tons per day and with the existence of V.E.R.P. there still is a degree of environmental damage by SO_2 as indicated by effects on lichens and mosses[3] and the injury to black spruce close to the smelter[2]. Therefore, while an emission of 625 tons per day cannot be said to be a "no-effect" level, it should be examined as a possible level which could be tolerated by the environment without irreversible harm until such time as sulfur containment technology permits a further reduction in SO_2 emissions.

Sulfur is an essential element for animal and plant life and is present in significant concentrations in all living tissues. The deposited SO_2 or its products rapidly enters the biogeochemical sulfur cycle. Sulfur is both a plant nutrient and a phytotoxin depending upon the chemical form of the sulfur and its concentration. Toxic effects of SO_2 on plants include bleaching of tissues, collapse of tissues, and disappearance of sensitive species. Toxicity of SO_2 can depend upon other factors such as relative humidity and light intensity[4]. Visible indications of injury in some cases may not occur until some time after the injurious exposure to SO_2.

It is widely accepted[4,5,6] that the large-scale emission of SO_2 to the atmosphere causes acidic precipitation in Europe and North America. It is estimated that most of the adverse ecological and economic impacts on eastern Canada from acidic precipitation would be averted if the SO_2 emissions in the northeastern United States and in Canada were reduced by 50%. Reduction of emission limit of SO_2 for the Thompson smelter by 10% immediately would be a concrete indication of Inco, Thompson's intention to decrease emissions. It would support the position of Canada in its attempts to negotiate with the United States a 50% reduction in its emissions, since Inco, Thompson is the third largest emitter of SO_2 in Canada[7].

Although the emission of SO_2 receives most attention, we consider that the emissions of particulates, which contain considerable amounts of metals (Table 6, Ref. 1), are of equal or greater concern. Unlike the deposition of sulfur compounds, the deposition of metals is essentially irreversible. The accumulation of metals around the Thompson

stack is reported by all three studies[1,2,3]. The reduction in quantity of particulates emitted daily has been dramatic from the 1960's to the present (Fig. 7, Ref. 1). Nevertheless, even though daily emissions of particulates averaged 2.0 to 2.4 tons per day in 1978 to 1980 or perhaps 1/30th of peak levels in the late 1960's, metals are still being deposited around the smelter. Deposition of nickel in 1980 at two sites 1.5 and 2.3 km from the stack was 40 to 50 times levels at background sites 66 miles from the smelter. Some species of plants within 10 km of the stack contain elevated concentrations of metals, particularly nickel, copper and cobalt[2]. The concern with metals is that they will accumulate in soil and vegetation around the stack over the lifetime of the smelter. Even after closure of the mine and smelter, they will remain indefinitely declining slowly by leaching into water or through soil erosion.

Most metals are toxic to terrestrial plants[8] and aquatic life[9]. Some metals can be directly toxic to plants, causing foliar burns and other injury. Other effects are reduction in growth of seedlings, loss of certain species from the community, decrease in enzyme activity of microbes responsible for nutrient cycling in soils (and decrease in soil productivity), and bioaccumulation through the food chain[8]. The concentrations of nickel around the Thompson smelter of greater than 1500 ppm within 5 km[3] are not far below those reported in the Sudbury area (2000 to 4000 ppm)[8]. Toxicity depends upon the amount of the metal which is soluble (unbound) rather than on total concentration in soil. Metals in the soils around the Thompson smelter are reported to be mostly bound[3]. Nevertheless, soil from a site 2.3 km from the smelter was sufficiently toxic to inhibit growth of jack pine seedlings in the greenhouse[3]. Largely unknown as yet is the behaviour of metals deposited on bogs. Bogs occupy about 65% of the area around Thompson[2]. Thus, whether bog soils bind metals as effectively as upland forest soils or permit more of the metals to enter ground and other water is particularly significant for this area.

In spite of the massive, well-documented impacts by both SO_2 and metals in the Sudbury region on forests, other vegetation, lakes and soils, it is the persistent high concentrations of metals which prevents the regeneration of forests[8]. Recognizing that the Thompson area, apart from some sites close to the smelter, does not appear to suffer much injury from metals, we recommend only a 50% reduction in the limit for particulate emissions. The goal is long-term reduction of total metal deposition. Therefore, moderate short-term fluctuations, from day to day, are probably not significant. Particulate emissions may be just as effectively limited by a weekly or monthly limit as by a daily limit. It is essential that industry's efforts continue to improve the technology of control of particulates and that controls are updated whenever new methods become available.

The operation of a major smelting complex is not necessarily incompatible with protection of a relatively pristine environment such as the Thompson area. Several features appear to provide a degree of environmental tolerance in the Thompson area - few point sources of atmospheric pollutants; the lack of association of markedly acidic precipitation with the SO_2 emissions, so far as has been monitored; and the relatively high alkalinity of soils and fresh-waters compared with more typical Precambrian Shield areas. With careful control of emissions over the decades of smelter operation, it seems likely that the Thompson area can avoid degradation.

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PROPOSED RESOLUTIONS FOR ANNUALMEETING.

1. That this brief be adopted by Council as circulated;

2. That Council recommends to the Minister that he order a reduction to licence limits for emission of sulfur dioxide and particulates from the Inco Smelter, Thompson as a demonstration of Manitoba commitment to solving the acid rain and metal pollution problems.

Approved, May 14/82 Council Meeting

Brief: Mosquito Control Programs in Manitoba

[The following brief was presented by Dr. Bill Turnock, on behalf of the Environmental Chemicals Committee, to the Clean Environment Commission hearings on May 12, 1982 - eds.]

INTRODUCTON

The Manitoba Environmental Council has been concerned with the problem of mosquito control in Manitoba since 1973, when we presented a brief at the public hearing held by the Clean Environment Commission to consider the proposed program for the chemical control of insects within the City of Winnipeg. Subsequently, we reviewed the application received by the Commission and made recommendations on the proposed programs.

The recommendations made by the Council in the past and in this brief are guided by the following considerations:

1. Mosquitoes are a continuing problem in most urban centres in Manitoba;
2. In most years, they are a major nuisance in the enjoyment of outdoor activities during the summer, a minor medical problem for some people, and a more serious medical problem for a very few people;
3. Mosquito-borne Western Equine Encephalitis (WEE) reaches epidemic levels occasionally;
4. The control of mosquitoes is difficult, and requires the use of potentially hazardous chemicals;
5. Insecticides and their carriers may cause medical problems in humans and undesirable effects on non-target organisms;

Therefore, the Manitoba Environmental Council has constantly recommended that the methods used in mosquito abatement programs conform to the best information available and that these methods be employed only if they are effective and when adequate measures are taken to protect human health and non-target organisms. Mosquito control programs must be evaluated as responses to two very different problems, firstly, in response to a continuing nuisance, and secondly, in response to a serious apprehended medical emergency that occurs occasionally.

GENERAL STRATEGIES FOR MOSQUITO ABATEMENT

The objective of a mosquito control program is to reduce the number of bites that would be suffered by people. Since biting mosquitoes breed in shallow, stagnant water, usually close to a source of food (e.g. farms with livestock) and may fly considerable distances before attacking humans the program must therefore concern itself with an area extending 3 - 5 miles around the human settlement. Three approaches to protecting people from bites are available:

Landscaping — this is the only approach that can result in a permanent reduction in the numbers of mosquitoes. The drainage or filling of breeding areas for biting mosquitoes should be a part of any abatement program. However, not all ponds are sources of mosquitoes and the Manitoba Environmental Council would be concerned if mosquito abatement was used as an excuse to destroy the rich pond life that exists in Manitoba.

Larviciding — this protects the people from bites by reducing the number of adult mosquitoes that emerge from the breeding sites. The compounds used to kill mosquito larve and pupae are effective but it would be physically

impossible, as well as extremely costly to treat every small puddle in which a few mosquitoes may breed. Larviciding can be an environmentally acceptable method of reducing mosquito numbers and thus the number of bites. It does not, however, significantly affect the number of mosquitoes in the next generation.

Adulticiding — the objective of adulticiding is to kill adult mosquitoes after they reach inhabited areas. Since thermal fogging with insecticides can only kill flying mosquitoes, and since mosquitoes hide in inaccessible places most of the time, this approach gives only temporary relief even when conditions are right. As the chemicals are applied close to human habitations, the safeguards to protect human health must be strictly followed.

1. **LANDSCAPING:** The first step is the preparation of a map of mosquito breeding sites around the settlement. Those sites that are amenable to landscaping should be identified and a program started to eliminate them, starting with those close in and moving outward as quickly as financial and other constraints (e.g. legal, availability of equipment, and fill, etc.) allow. Operations should consist of improving draining (e.g. of ditches) or by filling excavations (e.g. shallow borrow pits). If possible, deepening the pond (mosquitoes don't breed in deep water) may be more acceptable than draining or filling.

2. **LARVICIDING:** An effective larviciding program should include:

a) Prepartion of a map showing potential breeding sites;
b) Annual pre-treatment surveys throughout the summer of potential breeding sites to identify those in which larval populations of biting mosquitoes are present;
c) Use of a registered chemical larvicide that is suitable for the specific conditions;
d) Precautions to ensure that these substances are not applied in locations where runoff to flowing waters, rivers, stream or lakes may occur.

3. **ADULTICIDING/THERMAL FOGGING:** The application of insecticides in a thermal fog has a long history of use in Manitoba despite evidence that this approach gives limited protection at a relatively high cost. The effectiveness of thermal fogging in residential areas is described by Prof. R.A. Brust as follows:

"In summary, fogging of residential areas gives only temporary relief, normally for a period of 3 - 12 hours, and occasionally for 24 hours. The landing-biting count is generally reduced by 40-50%. In one fogging trial in 1974, we had a **maximum** reduction of 65% after 12 hours. In 1975, the July 3 and July 10 counts 12 hours after fogging were 0. It must be stressed here that fogging at Pinawa was done only when the weather conditions were suitable, i.e. wind conditions below 5 mph, air temperature between 15-25° C, and when convection currents were absent or minimal. Only 50% of the evenings were suitable for fogging during June and July 1975. **It is extremely important to note that if fogging is carried out on unsuitable evenings, no mosquito control should be expected.**

A further comment should be made regarding the value of fogging. since only 2 out of 7 foggings reduced mosquitoes for 24 hours (2 reduced mosquitoes for only 12 hours), the benefit to residents is very limited indeed. A 12 hour reduction is virtually useless, since fogging is done from 10 pm - 1 am and homeowners don't get a chance to use their backyards until 18-20 hours later. It should also be noted that 2 out of 7 foggings (29%) produced no reduction in landing-biting counts at Pinawa." (Brust, R. A. 1965. A comprehensive mosquito control program for Pinawa).

The chemicals in thermal fogs can also cause or aggravate medical problems to humans so we recommend that thermal fog **not** be used in residential areas except in emergencies.

Thermal fogging can be of use to give temporary relief from mosquitoes in parks, sports fields and other public areas that can be treated just before their use. In these areas, thermal fogging may be justified under the following circumstances:

a) mosquitoes are abundant enough to be a public nuisance (at least one bite/minute as determined by survey personnel);
b) thermal fogging operations should follow the recommendations of Professor R. Brust (Appendix A);
c) the operating crew of the fogger must be proficient in the proper methods of handling the insecticides and equipment and be given medical examinations, including the blood cholinesterase level, at the beginning of the fogging season and at regular intervals (at least monthly) as long as the operation continues;
d) precautions should be taken to ensure that insecticides are not deposited on private property or into lakes and streams.

4. **ADULTICIDING/AERIAL SPRAY:** The aerial application of insecticides for mosquito control is not normally recommend-

ed because the problem does not justify the cost and effects on humans and non-target organisms. Periodically, however, mosquito-borne Western Equine Encephalitis has been detected in Manitoba at levels that threaten an epidemic among humans. Under these conditions aerial spraying has been conducted. The identification of the potential medical emergency must and has been based on complex data from a monitoring system and requires the input of experienced experts. The decision to declare a medical emergency and to order an aerial spray, plus other methods of reducing the emergency, must be done on the political level. To reach this decision the data and expert opinion from the medical, entomological and environmental areas regarding the probable course and costs of the epidemic must be balanced against the costs and probable adverse effects of the control action. Evaluation of the past programs is difficult and specific comments on their efficacy or on the mechanisms for reaching the decisions are beyond the competence of the Manitoba Environmental Council.

However, there are some general areas where we believe that improvements can be made:

a) the evaluation of the effectiveness of such programs is difficult because there is no direct way of determining what would have happened if the program had not been implemented. In addition, because the action takes place in a perceived emergency, qualified personnel are occupied with the control action and cannot plan or implement scientifically rigourous evaluation projects. However, such projects are essential to provide the basis on which future control operations can be improved. The Manitoba Environmental Council therefore recommends that the Government of Manitoba encourage and fund the preparation of plans for research to be conducted when next a mosquito-borne WEE epidemic occurs;

b) There are many aspects of the mosquito vectors, the WEE virus, and their interactions that are unknown. Better information on the problem and on new methods of solving it could pay great dividends to the citizens of Manitoba in reduced hazard of infections or less expensive and less hazardous methods of control. Research on these problems needs to be conducted between epidemics. Unfortunately, current funding to support such research is not adequate. The Manitoba Environmental Council therefore recommends that the Government of Manitoba fund research in this area on a continuing basis so that detection of incipient outbreaks and their control can be improved.

5. **IMPROVEMENT OF MOSQUITO ABATEMENT PROGRAMS:** The planning and operation of a safe, effective, and minimally-priced mosquito abatement program requires considerable technical knowledge and competence. Some centres in Manitoba employ the necessary expertise or consult with well-informed residents. However, most centres have no access to informed personnel. The applications regarding mosquito control that were received Clean Environment Commission during the years 1973 to 1979 showed that most of the applicants, cities, towns, and municipalities and government agencies were unaware of the appropriate methods of insect control. Many applications proposed insecticides and methods of application that were unregistered, unsafe, ineffective, or all these. The level of knowledge and technical competence is unlikely to have improved in the few years since these organizations have been exempt from evaluation by the Clean Environment Commission.

The Manitoba Environmental Council therefore recommends that the Government of Manitoba take action to make mosquito abatement programs safer and more effective by initiating or improving mechanisms for increasing the awareness and knowledge of the public and public officials. Specifically, the following actions are recommended:

a) Revision, as needed, and reissue of the bulletin "Guidelines for Mosquito Control in Manitoba". Information Series No. 12, 1976;

b) Funding of consulting services to aid public bodies involved in mosquito control programs to provide training courses for the personnel conducting them. The Biting Fly Centre at the University of Manitoba could provide excellent service in this area. In addition, presentations to public officials and citizens in the smaller centres could provide a useful service. The Council organized and funded one such presentation, at Thompson, Manitoba in April 1976, with Prof. R.A. Brust as the visiting expert. In addition, presentations to organizations such as the Manitoba Association of Urban Municipalities would increase their awareness of effective methods of mosquito control and stimulate cooperation among local administrations in planning programs and purchasing equipment. The Council sponsored such a presentation in 1978.

c) Amending the Clean Environment Act to provide for examination of mosquito control programs by the Clean Environment Commission. This action is recommended primarily because it would enable the Commission to interact with the applicants in a manner that would stimulate these applicants to seek the advice, and the training of personnel, that is necessary for them to conduct effective and safe programs.

The Province of Manitoba is fortunate in having not only the expertise in mosquito control (Department of Entomology and the Biting Fly Centre, University of Manitoba) but also one of the most effective mosquito abatement programs on the continent (City of Winnipeg). The challenge is to extend this knowledge and experience to the smaller centres in the province that wish to reduce their mosquito problem.

Appendix A — Mosquito Fogging Conditions and Chemicals

In most cases fogging is not a recommended method of mosquito control. However when this method is used, the following applies:

1) Fogging must be done in late evening or early morning to be effective. Mosquitoes are only killed when they are in flight, and very few fly by day.

2) Fogging must **not** be done during wind speeds above 5 mph or when temperatures are below 60°F (15°C). Fog is dispersed too rapidly at high wind speeds to be effective. Fog must also stay on the ground for 30 seconds to be effective. Mosquitoes do not fly in high winds or at low temperatures.

3) If Malathion is selected as the chemical of choice, it is frequently ***ineffective*** at air temperatures below 60°F (15°C).

4) The dry fogger exhaust must be below 1000°F (535°C) and the wet exhaust (fogging chemical being emitted) must be below 700°F (370°C).

5) Malathion or Methoxychlor are recommended as the chemicals of choice for Manitoba conditions. A 6% solution should be used, with diesel fuel as the carrier. The fogger should be set to deliver 25 gallons (118 litres) of solution per hour, with a vehicle speed of 5 mph (8 km/h). Proper calibration (gallons per hr) must be carried out frequently by the operator to ensure the correct amount of material is being delivered.

6) A Tifa fogger delivering 25 gallons of 6% solution per hour (vehicle speed 5 mph) distributes the chemical over an area of 182 acres per hour if the fog drifts 300 ft from the fogger. Most of the chemical falls out within 150 ft from the fogger, and a more accurate calculation to use is 90 acres per hour. 25 gallons of solution conton 240 oz of chemical. This means that 2.7 oz of chemical are applied per acre.

7) Oil based fogs appear denser and more spectacular than water based fogs. According to the manufacturer of Tifa foggers, water based fogs are as efficient and certainly more agreeable to people and animals. However there are some practical problems with using water as a carrier. Malathion and Methoxychlor break down in water over a period of a week and hence chemical mixed up several days before it is used is not at its full strength. In a thermal fog generator, much of the water evaporates in the exhaust stream. The resulting fog carries a more concentrated insecticides, which is carried a shorter distance.

R. Brust
Professor of Entomology
University of Manitoba
March 21, 1975.

* * *

Approved, May 14/82 Council Meeting

May 27, 1982

Mr. S. Eagleton, Chairman
Clean Environment Commission

Dear Mr. Eagleton:

Following my presentation on behalf of the Manitoba Environmental Council to the public hearing on mosquito control programs in Manitoba on May 12, 1982, I was asked to provide further information on the statement (p.6, para.3) "most of the applicants (cities, towns municipalities and government agencies) were unaware of the appropriate methods of insect control."

Method	No. applications	
	75-76	Current
Larviciding only	2	1
Larviciding and fogging	6	6
Fogging only	11	10
Aerial spray and fogging	0	1
Aerial spray only	1	2
Ground and aerial spray	1	0
Total	21	20

In 1975 and 1976, the Council's Environmental Chemicals Committee reviewed 21 applications that had been received by the Clean Environment Commission regarding mosquito abatement programs. I have classified these on the basis of the proposed method and include for comparison, a summary of the 20 current applications listed by Mr. K. Plews in his presentation to the Commission on May 12, 1982.

These figures show that although the number of applicants proposing a larviciding program has increased (from 4/yr to 7/yr) the proportion using this approved method has not increased.

Some examples of the lack of knowledge of the applicants are:

a) Dauphin (C-b-1015.1, 1975) proposed the aerial application of malathion over residential areas for the control of forest tent caterpillars and mosquitoes.
b) Winnipegosos (C-b-1008.1, 1975) proposed the use of a thermal fogger to treat 640 acres for mosquito control. We presume that this treatment was for breeding areas surrounding the town where larviciding would be appropriate.
c) Flin Flon (C-b-279, 1975) proposed fogging with "Methane". This may be a misspelling of Malathion but shows that they were not familiar with the registered insecticides.

In reviewing the applications for 1975 and 1976 I was again struck by the difference in the detail given by applicants with good mosquito abatement programs (e.g. Winnipeg, Brandon) and most of the applications from smaller centres. The applications from these smaller centres do not provide the kind of information that enable a reviewer to determine exactly what kind of program they propose. These applications, for example, do not indicate whether or not the personnel applying the insecticides are aware of safety precautions and are subject to medical examinations, especially for cholinesterase levels, during the period that they are exposed to the chemicals. The suggestion by Mr. K. Plews, that all operators of insecticidal equipment be licensed, is excellent, and we support the implementation of regulations to this effect.

The discussion following the presentation by Dr. Hollebone on May 12, 1982 brought out an important point that is relevant to the Council brief. She pointed out that the registration procedure is limited to certification that an insecticides meets the federal requirements for effectiveness and safety and that no attempt is made to compare different chemicals registered for the same useage. She further noted that responsibility for recommendations regarding the use of registered insecticides rests with the provinces.

In Manitoba, the Environmental Management Division has confined its examination of applications for the use of insecticides for mosquito control to the determination of whether or not the compound is registered for this purpose. We believe that the lack of expertise on insect control in this Division and the lack of an active policy to encourage applicants to use the best methods of mosquito control has prevented the development of safe and effective methods in most places. The larviciding programs at Pinawa, Thompson and Loni Beach are examples of what can be achieved if the local governments and public are made aware of the relative effectiveness of methods other than thermal fogging.

We regret that we were unable to give specific comments regarding past and future programs against the vectors of Western Equine Encephalitis. The Council asked to be allowed to participate in the "Western Equine Encephalitis Workshop" held 18-19 February 1982, but our request was rejected.

We hope that the above information will be helpful to you.

Sincerely,

W. J. Turnock
Environmental Chemicals Committee

Rural mosquito control methods hit at hearing

By Ritchie Gage

Applications for insecticide spraying programs submitted to the Clean Environment Commission between 1973 and 1979 showed most rural cities, towns, municipalities and government agencies were not aware of appropriate methods of mosquito control, a public hearing was told yesterday.

The commission's mosquito control hearings are being held at the Norquay Building. Stan Eagleton is chairman for the three-days of hearings which end Friday.

Dr. William Turnock, a spokesman for the independent Manitoba Environmental Council, told the first day of the hearings many applications proposed insecticides that were unregistered, unsafe, ineffective, or all of these.

"The level of knowledge and technical competence is unlikely to have improved in a few years since these organizations have been exempt from evaluation by the CEC," he said.

Ken Plews, a provincial government environmental officer, told the commission that 18 rural municipalities use fogging devices to spread insecticide or larvicide without licensing or central training.

Legislative change

Plews said as of 1976 a legislative change allowed municipalities to proceed with spraying programs after registering their programs with the provincial Environmental Control branch.

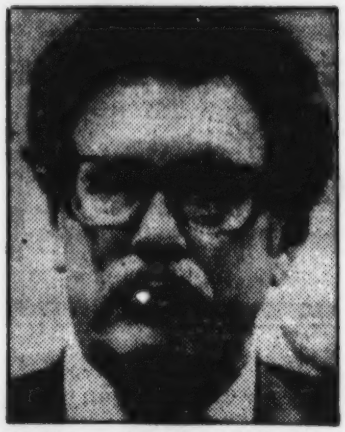
Manitoba is the only province that does not have training and licensing procedures for applicators of mosquito-killing insecticides, he told the five-man commission.

Turnock said the council recommends training for insecticide applicators, and presentations on mosquito control programs to the Manitoba Association of Urban Municipalities.

Turnock said there is plenty of expertise through the City of Winnipeg, and the University of Manitoba Biting Fly Centre.

He called the City of Winnipeg's mosquito abatement program "one of the most effective on the continent."

Aerial spraying last summer of Winnipeg and parts of the province with the chemical Baygon created a controversy between government and environmentalists. The spray was used to reduce the incidence of western equine encephalitis, a disease transmitted by mosquitoes.



Eagleton: hearing chairman

Turnock, an entomologist with Agriculture Canada, said aerial spraying and ground fogging of mosquitoes using insecticides are questionable control methods. He said weather conditions badly hamper such methods.

Insecticide sprays

In addition, Turnock said a health hazard exists when insecticide sprays are used.

"The chemicals in thermal fogs can also cause or aggravate medical problems in humans so we recommend that thermal fog not be used in residential areas except in emergencies."

Regarding aerial sprays, the council said decisions on such action should be taken at the political level and should be done only when the danger of disease outweighs other factors.

Dr. George Bowen, assistant deputy environment minister, said in a later interview that provincial monitoring last year during spraying showed a 90 per cent kill rate 24 hours after application.

Bowen said he was not aware of any person falling ill as a result of insecticide spraying last year.

The commission was to continue hearings today with public submissions from 6:45 p.m. to 10:30 p.m. Tomorrow the public submission session will run from 7:15 p.m. to 10:30 p.m.

Winnipeg Free Press, May 13, 1982

CHRONOLOGY OF GARRISON EVENTS

[In order to more completely document the Garrison Diversion "events" the following chronology from March, 1981 - April, 1982 is presented for the first time. The assistance of the supplying agency is appreciated for providing this information. - eds.]

March 5/81 - Reagan administration tentatively approves $4 million for Garrison project for new fiscal year beginning October 1981.

This $4 million plus $3 million left over from previous year to be used primarily for West Oakes pumping station on James River as well as for maintenance of existing work.

March 10/81- Trudeau and Reagan discuss, among other issues, the Garrison project. Reagan assures Canada that U.S. will honour the 1909

Boundary Waters Treaty and that no work will be undertaken that will affect Canadian waters.

March 17/81 - a group of South Dakota landowners file suit against the Garrison project claiming that the James River will be affected detrimentally if the flow from the Missouri is diverted there because of Canada's objections. They claim that there has been no protection allowed for S. Dakota and no benefits to S. Dakota.

March 25/81 - Canadian Embassy in Washington sends official note to Congress urging them not to speed up construction of the project.

March 31/81 - Onno Kremers, (Manitoba Action Committee against Garrison) testifies to Senate sub-committee that Garrison could cost Canada $1/2 billion a year in lost fisheries, tourism and damage to municipal water supplies.

April 7/81 - N. Dakota Governor Olson meets with Premier Lyon and cabinet members. N. Dakota will continue to press for completion of the project but will abide by 1977 agreement with Audubon Society that no work continues that will affect Canada. Lyon states that Manitoba's position is "etched in stone" that there be no transfer of waters. Olson proposed a "phased project which would allow only certain portions of the project to go ahead."

April 24/81 - first official Canada/U.S. meetings held in Washington. N. Dakota invites a Canadian delegation to inspect experimental work being done on biological screens.

May 6/81 - U.S. federal judge rules in favor of National Audubon Society that Congress must review and give approval to entire Garrison project before any further construction can be completed.

May 19/81 - N. Dakota Attorney-General announces plans to appeal decision at U.S. Court of Appeals in Washington.

July/81 - Congress votes to appropriate $4 million to Garrison project. Audubon Vice-President Madson upset that there was no Canadian lobby before the vote. However, this still must be passed by the Senate Appropriations Committee and the Senate.

September 14/81 - letters sent by Premier Lyon and Canadian Ambassador Towe to Senate Appropriations Committee urging that no funding be allocated to Garrison because of repercussions to Canada.

September/81 - U.S. Senator Burdick attempts to introduce legislation to Congress which would exempt the project from the judicial system and thereby nullify the 1977 Agreement between the Department of the Interior and the Audubon Society, as well as the May 1981 injunction which halted the project. This action was rejected by the Senate sub-committee.

September/81 - meetings are held in Brandon with participation from 30 U.S. and Canadian groups including the Manitoba Federation of Labour, Manitoba Farmers Union and Metis Federation urging Manitoba government to seek the support of the otherprovinces as well as the federal government in its fight against Garrison.

September 30/81 - Premier Lyon meets with U.S. Ambassador to Canada Robinson. Robinson indicates that there have been no new appropriations and there will not likely be any for now. He indicated that any continuation of the irrigation project in the future would see water flow south to the Missouri River.

October/81 - Manitoba Anti-Garrison Committee secures the support of the James River Flood Control Association in protesting Garrison.

October 17/81 - U.S. Interior Secretary James Watt tells N. Dakota farmers that Reagan administration favors Garrison. First indication of Reagan government positions on the project.

October 22/81 - U.S. Interior Department

denies that Watt is a supporter of Garrison, says Watt has asked N. Dakota authorities for a detailed proposal of what they want. Lyon sends another official telegram to Senate Appropriations Committee.

October 22/1981 - North Dakota Senators Burdick and Andrews successful in influencing Appropriation Committee in releasing $4 million for Garrison project for work not affecting Canada. If approved by full Senate, this will nullify the 1977 Interior Department-Audobon Society agreement and court injunction.

October/81 - Natural Resources Minister Harry Enns announces that personal lobbying by himself and Premier Lyon may be necessary in Washington to fight Garrison.

October 23/81 - Sterling Lyon receives letter from Ambassador Robinson stating no funds appropriated for the Garrison project may be used on features affecting waters flowing into Canada. Most of the $4 million appropriation was requested to meet maintenance and personnel costs. If the injunction halting construction pending Congressional review is lifted, some $5.3 million in unused funds will be available for construction on the West Oakes irrigation test area.

October 29/81 - Thomas Niles, Assistant Deputy Secretary of State, and Gary Caruthers, Assistant Deputy Secretary of the Interior basically reaffirmed to Canadian officials in Ottawa that the United States would abide by the 1909 Boundary Waters Treaty.

November 4/81 - Senate agrees to include restrictive amendment allowing construction not affecting Canada with the appropriations bill.

November 17/81 - N.D.P. government elected in Manitoba; promise to hold public negotiations with American officials, and to establish an office in Washington to watch Garrison developments.

November 20/81 - Congress votes 314 to 67 to remove clause In Senate appropriations bill that struck down 1977 court injunction preventing further construction on the Garrison Diversion project.

November 21 /81 - Senate passes appropriations bill, including $4 million for Garrison. Senator Andrews, disappointed with Congressional decision to uphold the court injunction says, "We've got to have Garrison diversion or the next wildlife flock will go to nothing. It's incomprehensible that environmentalists don't want it."

January 18/82 - Richard Madson, Midwestern Regional Representative of the National Audubon Society, is fired because of his opposition to moving the regional office from Jamestown to Minneapolis.

January 29/82 - A three-judge panel of the District of Columbia handed down a ruling permitting construction to resume on the Garrison Diversion project, temporarily suspending the May, 1981 injunction. The U. S. Court of Appeals will consider the merits of the Garrison Diversion sometime in the future. Construction is allowed only on portions of the plan not affecting Canadian Waters.

February 4/82 - Manitoba government caucus approves a "get tough strategy" including some form of permanent lobbying operation in Washington, D.C.

February 7/82 - United States' federal budget proposes $4 million to be allotted to Garrison Diversion for the next fiscal year, starting October 1/82.

February 8/82 - Senator Andrews asks United States federal authorities to allow unplugging the McClusky Canal. This involves removing four earthern dikes and dredging out a short section, leaving only one dike separating Hudson's Bay draining basin from Missouri River water. The Interior Department begins drawing up plans for a revised construction project, and announces that it may ask Congress for substantially more money in 1983. Both Manitoba and Canadian governments express concern over these new developments.

March 3/82 - Natural Resources Minister Al Mackling announces that Manitoba will send full-time representatives to Washington, D.C. Provincial and federal government officials discuss whether Manitoba will open its own office or work out of a federal office.

March 5/82 - Garrison Focus office is opened by the Manitoba government in the legislative Building to provide information to the public on the Garrison Diversion project, and act as a focal point for lobbying activities of citizens groups.

March 12/82 - Manitoba and federal governments announce they will join forces to fight Garrison. A joint ministerial committee will be set up between Al Mackling and Mark MacGuigan. A Manitoba official will be based at the Canadian Embassy in Washington and Manitoba will hire a Washington law firm to monitor developments.

March 16/82 - Murray Sagsveen, North Dakota state-appointed attorney for the Garrison Diversion Conservancy District announced a series of concessions to the Canadian position. The offer included:

- reduction of irrigated area from 100,000 to 34,000 hectares;
- suspend second phase, make modifications to ensure no interbasin transfer of water;
- free office space for Manitoba at the conservancy headquarters in North Dakota
- a commitment that future planned irrigated areas would be concentrated more in South Dakota.

Natural Resources Minister Al Mackling and federal officials did not regard the proposals as new concessions. The proposed revisions are part of a preliminary study which has no formal status in the United States.

March 26/82 - Al Mackling announces in the legislature that Crown Attorney Dirk Blevins was appointed Manitoba's representative in Washington, D.C. The Washington law firm of Welford, Wegman, Krulwich, Gold, and Hoff was hired by the province.

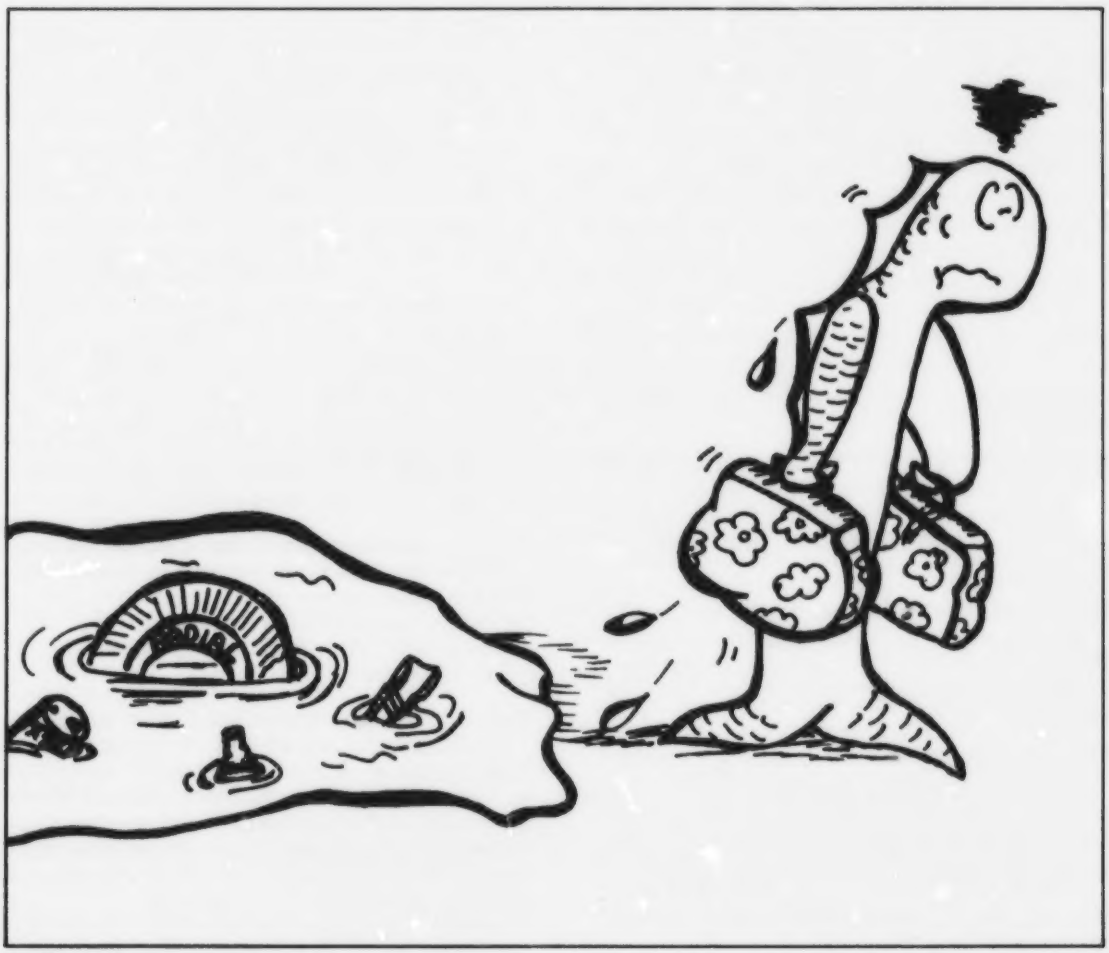
March 30/82 - Construction bids opened on the Oakes Pumping Station. It was announced that a contract would be awarded within 30 to 60 days. Expropriation notices were issued for land required for the New Rockford Canal. Funds were announced for the Lonetree Reservoir.

April 5/82 - Dirk Blevins assumes his new duties in Washington, D.C.

April 8/82 - James Watt, United States Interior Secretary, visited Dickinson, North Dakota and said his department is trying to increase funding for the Garrison Diversion project by $10 million for the next fiscal year.

* * *

Courtesy of the Environmental Protection Service, Winnipeg



82008, Debbie Watson, Brandon.

LAND USE

Basil Rotoff

At the outset, the Committee set itself the following tasks:

1. Land use implications of the proposed Alcan smelter.
2. Effects of excessive land clearing on downstream flooding.

Time permitting, the committee would consider:

3. The effects on agricultural land use of the application of agricultural chemicals, according to the manufacturers' specifications.

Through a combination of research done by our own committee members and some information shared with the Environmental Chemicals Committee, the implications of the proposed Alcan smelter on agricultural and residential land use were examined in the light of some concerns expressed by the farming community and by rural residents. A brief was prepared for the Annual Meeting, reflecting these concerns.

Some extensive research was carried out with the aim of correlating the increase of flooding levels and frequency with the clearing of natural land in private ownership. This work entailed some historic research into weather patterns, flooding data, acreages of cleared land and air photo interpretation in a selected area. The statistical compilations are nearly completed but will not be ready for this Annual Meeting due to the magnitude of the task. It will be completed soon and hopefully will be considered by next year's Committee.

The committee expressed considerable concern over the long-term effect of certain agricultural practices which are common in the application of agricultural chemicals according to manufacturers' specifications, although these may be desirable and fully justifiable in the short run. Some data were collected by the committee, which shall be offered to the new committee, should they want to pursue this investigation.

The Chairman took an active part in the Community Workshop on the Kildonan Corridor, and our representative's suggestions were incorporated in the scheme.

I wish to thank all the committee members and technical personnel who contributed to our work this past year.

* * *

Presented at May 14/82 Council Meeting

Brief: Land Use Impacts of Proposed Alcan Smelter

RECOMMENDATIONS:

The Manitoba Environmental Council recommends to its Minister that:

1. Sites other than the presently publicized Balmoral location be investigated before final approval has been given by the Provincial Government for the construction of the smelter.
2. Once the final site has been selected the Environmental Management Division should issue strict guidelines as to the range of safe distances from the one mile buffer zone at which various agricultural activities can be pursued.
3. The environmental impacts of increased rail and road transportation on the farming community and affected settlements be thoroughly investigated and communicated to those affected, at public hearings.
4. Small communities surrounding the selected site should be fully informed of the demands which may be made upon their infrastructure by a sudden increase of population, and that administrative mechanisms be designed to prevent those communities from bearing the social and economic cost of said demands.

BACKGROUND

Whereas this brief does not intend to belittle the commendable goals Alcan has set for itself in terms of mitigating environmental impacts, e.g. avoiding prime agricultural lands, establishing a one mile buffer zone, etc., it is the Council's position that, within these goals, the selection of the Balmoral Site was motivated by advantages accruing to Alcan rather than to the public interest. It is common knowledge that the site was selected from a number of possible locations which, to our knowledge may be just as adequate as (if not superior to) the Balmoral Site. Furthermore, although this site may have met with the Municipal Council's approval, it may present some problems to the community at large. Regardless of the reality of the actual threat, it seems to be the general perception that the location of the Site between two major wildlife areas (Shoal Lakes and Oak Hammock Marsh) may pose a threat; similarly, there is perception that this location is in the path of prevailing winds. The question is not whether these perceptions are justified, but rather that they do exist, and that the public is aware of other sites which seem less threatening to the environment. Consequently, any final decision on the site and

the choice of one site over another should be publicly justified as best serving the public interest.

The work of the Environmental Chemicals Committee of Council has highlighted the lack of precise data, which exists regarding emissions of gaseous and particulate matter, and the range and precise nature of the fall-out. (See "Brief on Environmental Information" Dec. 7, 1981).

The Council has considered the following:

a) gaseous and particulate matter will be transported beyond the one mile buffer zone;
b) there will be zones of different degrees of pollution around the buffer zone;
c) these zones of pollution may differ in distance and intensity depending on the pollutant in question;
d) different agricultural activities may have varying degrees of sensitivity towards any one of these pollutants.

Therefore, for each of the principal agricultural activities traditionally carried out in the area, safe "contours" should be specified. For instance, given a certain concentration of a pollutant, dairy farming may be carried out right up to the buffer zone, but feed lots may have to stay some distance away from it, or vice versa. Information of this nature should be made available to the farming community in the vicinity of the smelter, once the final decision on the site has been reached.

The operation of the smelter will require a steady flow of unit trains of alumina to keep the plant supplied in raw materials. Although this will not present any problems on the mainlines of existing railways, any branch lines carrying unit trains will have to be improved, e.g. crossings strictly controlled or limited; land uses which were developed under conditions of low traffic will no longer find the proximity of a railway line compatible, and so on. These problems will be exacerbated in the case of new branch lines or spurs. Similar effects were observed after the construction of the Robert Banks branch line in British Columbia. Agricultural operations were disrupted; the moving of cattle, the supervision of and access to those parts of an agricultural operation which found itself bisected by the railway, etc. Similar effects should be considered in Manitoba and accounted for in the environmental impact assessment. Moreover, added road traffic will develop along roads where some residential frontage may exist. The impact of this increase should not be borne by residents.

Alcan will generate 700 jobs. It is reasonable to assume that at least 50% of these workers or 350 families will choose to live in smaller settlements near their place of employment, although the actual number is difficult to predict, as well as its distribution among neighbouring communities. In any event, a considerable influx of people may be expected in communities which, at present, are not geared for any substantial expansion. In many cases this may mean an additional burden on their present infrastructure: sewer, water, schools, etc. A number of these communities may not even have any long range plans nor land available for development. It is therefore imperative that, immediately upon the final site selection, small communities be given guidance and assistance in meeting the pressures that may develop.

Land Use Committee

Basil Rotoff, Chairman

Approved in principle, May 14/82 Council Meeting

PLAN WINNIPEG

[The following brief was delivered to the Executive Policy Committee, City of Winnipeg on Feb. 11. 1982 by Bill Kennedy - eds.]

The Manitoba Environmental Council is a volunteer organization comprised of 100 individual and organizational members from across the Province of Manitoba. The membership includes men and women from many walks of life, each with an interest in the Manitoba environment, its protection, and preservation for future generations. The areas of our interest include both natural and man-built environments.

One of our jobs is to provide advice to the Minister of the Environment on matters affecting the Manitoba environment and also on public issues which we feel, as a Council, warrant the attention of our Minister, the Honourable Jay Cowan. We also have an interest in increasing public awareness of environmental issues in Manitoba through education programs, the organization of forums and symposiums, and through presentations at public hearings such as the present one.

Some members of E.P.C. may recall our early representations to the City in favour of retaining and reinforcing the environmental impact assessment procedures originally spelt out in The City of Winnipeg Act. Or they may remember our representations to the City against mosquito spraying, particu-

larly in the absence of cost-benefit studies which substantiated the value of using such chemical sprays. I might add that, to this day, we retain this concern.

This morning, I am pleased to say that our range of comments to the City is much more positive and of a much more complimentary nature. Overall, we believe that the City of Winnipeg Proposed By-Law No. 2960 (Plan Winnipeg) is a very forward looking and highly practical document. It represents a vision of Winnipeg for the year 2000 which the Council heartily endorses, with one or two reservations which we will leave to the end of our presentation. The plan itself appears to be well researched, well organized and action oriented. If many of the proposed policies and objectives outlined in Plan Winnipeg are turned into municipal programs and municipal action, then Winnipeg will certainly become one of the most efficient, compact, and energy conserving cities in Canada. This pleases the Manitoba Environmental Council a great deal.

Specific comments with respect to the contents of Plan Winnipeg follow below.

In the area of **environment**, the Council strongly endorses the objectives of historical preservation and of measures to reduce noise pollution, odour and air pollution by means of land use controls. We applaud your proposals of limiting development of flood prone areas and of promoting forms of renewably energy.

In the area of **water supply**, we join the City of Winnipeg in expressing our concern with the potential pollution of Shoal Lake. We support the proposals contained in the plan to study the problem and in addition, to conserve our existing supply of water over the next 20 year period by sponsoring programs to minimize water demand.

In the area of **land drainage**, we support the City's intent of preserving natural creeks and drains. These areas are, of course, important for wildlife habitat in addition to providing amenities to urban dwellers who do not, perhaps, have the opportunity of enjoying some of the many other natural areas of Manitoba outside of Winnipeg.

In the area of **transportation**, the Council supports the City's proposals in Plan Winnipeg to promote the use of transit. The Council encourages the early implementation of City proposals to provide bus only lanes, to enact automobile parking restrictions, to implement park and ride programs and to introduce car and van pooling programs. Measures such as these not only provide for cleaner city air, but they also conserve precious energy.

In the area of **parks and recreation**, our Council is strongly supportive of the City's proposals to beautify the City with park developments in old and new neighbourhoods. We support proposals for parks along riverbank areas where nature oriented green spaces are proposed for development in Plan Winnipeg. A subtle reminder to City Parks personnel is perhaps in order here in the context of park development. The reminder is that 'nature' is the world's best developer of parks; that all of Winnipeg parks do not needly costly and well manicured lawns to be beautiful and well used; and that overall, the greater the diversity of grasses, trees, and shrub species in a park development, the greater will be the diversity of wildlife habitat, flora and fauna.

The Council supports the development of more downtown parks to increase the vitality of this often neglected part of the city. We support the development of the proposed open space linkage system, the designation of scenic drives in Winnipeg; and the preservation of landscape features in addition to proposals contained in Plan Winnipeg to develop new regional scale parks within Winnipeg's commuter shed.

An area of extreme environmental concern, however, is completely missed by Plan Winnipeg. That is the issue of **saving our elm trees**. Winnipeg's elm trees are perhaps the single most important aesthetic feature which this urban area possesses. The current level of effort to protect them is minimal at best, negligent at worst. The Manitoba Environmental Council proposes a major and massive effort to save this important natural heritage and encourages equally important programs of diversified tree plantings.

In the area of **solid waste disposal**, the Environmental Council supports the City proposal to develop a modern garbage burning plant in the Amy Street location and as well, encourages the early undertaking of studies of the potential problems in and around the 35 known landfill sites within the City boundaries.

Also in the area of **solid waste**, the plan proposes co-operation poses cwith federal and provincial governments in the development of hazardous waste disposal facilities. The Environmental Council strongly encourages such co-operation, however, we caution the City of Winnipeg not to expect any such cooperation as stated in the Plan if City offi-

cials continue to take positions such as the recent refusal of Council to assist a Canadian Crown Corporation in a very difficult disposal problem.

Perhaps the greatest concern which the Manitoba Environmental Council has about Plan Winnipeg lies with the proposed City policies concerning **sewage and pollution control**. The Environmental Council strongly objects to City claims that the present sewage disposal methods are good for the next 20 years to come. It is widely known by Winnipegers, by members of the Manitoba Environmental Council, and indeed, by the Province of Manitoba that City rivers are polluted by City sewage. The recent report of the Clean Environment Commission documents that "bacterial contamination of the Red River by the City of Winnipeg is environmentally unacceptable." It documents that "Winnipeg sewage disposal systems do not meet microbiological standards which apply to the rest of the Province." In brief, these may be nice ways of saying that we live beside open sewers. The Manitoba Environmental Council strongly supports the recommendations of the Clean Environment Commission that "all effluent from all the Winnipeg pollution control centres should be disinfected" and that "a full scale tertiary treatment project should be considered as soon as possible."

In summary, and in an overall sense, the Manitoba Environmental Council is strongly supportive of the proposals and recommendations set forth in Plan Winnipeg. However, we do, as mentioned, have serious reservations about the City's lack of regard for preserving our elm tree heritage and for cleaning up our rivers. In closing, we would like to draw an analogy between the contents of Plan Winnipeg and a large barrel of ripe juicy apples. It only takes one or two bad apples to spoil the barrel.

* * *

Approved, Council Board of Directors, Feb. 3, 1982

WATER AND WASTE

A.C. Maniar

The Committee met four times during the year 1981-82. At the Fall Meeting on December 7, 1981, two briefs were submitted which were approved. Brief #1 was for improving Red River water quality. It was presented so that our Government would give priority to carrying out the purification waters of the Red River. Brief #2 was of a serious nature. Since many unknown factors are involved in atomic waste disposal, this brief was directed purely to prevent the Federal Government from dumping atomic waste in the future in the Whiteshell area.

The Committee is monitoring, as usual, the Garrison Diversion Project. In previous years, we have received excellent reports from the Action Committee Against Garrison by Mr. R. D. Howard. This year, through the efforts of the new Chairman of Committee, Mr. Ted Arnason, Mayor of Gimli, we have again received a report on the Garrison Project. We intend to expand this coverage to include relevent informations received from various Government Departments. Mr. T. Youmans, a member of our committee, has prepared a report on the recent events of the Garrison Diversion Project and an up-to-date chronological list of the events of this threat to Manitoba is being prepared.

Two lectures were arranged on pertinent topics. Mr. Alex Penman, head of the Water Division, City of Winnipeg gave a talk on the City's Water system on March 1, 1982. The lively discussion on water supply and its purification was very informative. On April 6, 1982, Dr. R. B. Lyon, Head of the Environmental and Safety Branch, Atomic Energy of Canada Ltd., Pinawa, gave a talk on "The Canadian Nuclear Fuel Waste Management Program". Dr. Lyon's talk was very interesting, informative and gave insight into the research being carried out by AECL and the problems of atomic waste.

Brief # 3 on "Sewage Disposal in Manitoba Waters" is submitted for approval at this annual meeting.

I wish to thank the members of the Water and Waste Committee and Mr. J. J. Keleher for their help.

* * *

Presented at May 14/82 Council Meeting

Brief: Red River Water Quality

RECOMMENDATION:

The Manitoba Environmental Council recommends to its Minister that suitable measures be taken to improve the water quality of the Red River, and that this matter be given special attention and priority.

BACKGROUND:

The Red River entering Canada at the U.S.A. border meets basic water quality standards as required by the U.S.A. and Canada. It is common knowledge that the Red River is found to be polluted in Winnipeg and its surrounding areas. This polluted water can cause a variety of diseases (skin, respiratory and intestinal) in humans. The water also has a poor recreational quality. The Red River is being used in summer as well as in winter for recreational purposes. The polluted Red River water is being used, when required, by Selkirk, Manitoba, in their water treatment plant for the purpose of domestic use. Even the highly polluted Thames River in England is already purified.

Water and Waste Committee

A. C. Maniar, Chairman

Approved, Dec. 7/82 Council meeting

Brief: Atomic Waste Disposal

RECOMMENDATION:

The Manitoba Environmental Council recommends to its Minster that steps be taken to prevent any decision being taken by the Federal Government to store atomic waste permanently in the Pinawa area. A firm assurance to this effect is necessary as the storage of atomic waste in the Pinawa-Lac du Bonnet area may be contemplated in the future.

BACKGROUND:

There is world fervour regarding the danger of atomic waste and the safety of its disposal. There is not enough data available on rock masses in the Canadian Shield even to make a preliminary estimate of its strength as reported by the Technical Advisory Committee of Atomic Energy of Canada Ltd. (AECL). This was reported in the Winnipeg Free Press on June 24, 1981. Dr. Stanley Hatcher, Director of AECL's Waste Management, stated in his interview after receiving the above report that, "preliminary calculations indicated radioactive waste could be buried in granite rock without creating a health hazard" which contradicts the report of the Technical Committee. Dr. Carl Ridd, Professor of Religious Studies at University of Winnipeg, in his letter in the Winnipeg Free of July 7, 1981, re-emphasized that AECL and its spokespeople are not acting as sober scientists but as "Sales People" creating a credibility gap and image problems. It has been estimated that many millions of dollars will be required to undertake the studies on the rock formations, their strengths and the feasibility of storing radioactive waste underground. If the studies turn out to be in favour of underground storage, there is a good possibility that the **same underground hole** which is being dug in the Pinawa area for study purposes will be used for permanent storage of atomic waste. Since the dollars spent now would amount to several times more to make a similar hole elsewhere after several years, because of inflation, **it appears to be almost definite (predetermined)** that the Pinawa site will be used to dump atomic waste underground. This may pose tremendous hazards for the transporting, handling and leakage of the waste.

Water and Waste Committee

A. C. Maniar, Chairman

Approved, Dec. 7/82 Council Meeting.

Brief: Sewage Disposal in Manitoba Waters

RECOMMENDATION

The Manitoba Environmental Council recommends to its Minister to establish a long-range programme to prevent any untreated sewage being allowed to flow in the lakes and rivers of Manitoba.

BACKGROUND

The Clean Environment Act (Chapter C130) and the Act Respecting Public Health (Chapter P210), prohibit unclean or offensive materials or untreated sewage to be discharged into a body of water or a water course. There are situations where untreated sewage is being periodically discharged in rivers of Manitoba. Some examples are cited below.

The City of Brandon dumps raw sewage into the Assiniboine River because the Brandon sewage treatment pump is incapable of handling the City's sewage during peak periods (Winnipeg Sun, Nov. 4, 1981). One wonders whether a higher capacity pump, if installed, could solve this problem.

The City of Winnipeg is allowed to dump sewage from the storm sewer overflow. This condition is unavoidable with the current treatment plants. Further, the Winnipeg sewage system dumps raw sewage into the Red River approximately 30 times each open water season and the discharge may last several days (Winnipeg Free Press, Nov. 24, 1981). The union of storm sewer pipes and pipes carrying untreated sewage at certain places are very difficult to change and to remedy this sort of unfortunate situation would involve prohibitive expenditure. This kind of storm sewer overflow system should not be allowed to be built in future in Manitoba.

If dumping untreated sewage is not stopped there is a possibility that many more municipalities will dump sewage in our rivers and thereby, pollution in the rivers will increase as the years go by. It is hoped that some kind of monitoring program will be instituted to check the above situation.

Water and Waste Committee

A. C. Maniar, Chairman

Approved, May 14/82 Council Meeting

Brief: Recycled Stationery

RECOMMENDATION:

The Manitoba Environmental Council recommends to its Minister to seek the co-operation of appropriate Ministers to increase public awareness of de-inked and recycled stationery products and to urge Government, schools and large corporations to lead the way in the conservation of every natural resource by using only de-inked and recycled stationery in correspondence and publications.

BACKGROUND:

The production of fine paper (stationery) involves the use of "virgin fiber". The quality of paper produced depends on the quality of materials used in its production. Paper not entirely made of virgin fiber is not considered to be as fine in quality.

All Canadian mills are currently doing some degree of reprocessing of their own waste virgin fiber scraps, i.e. batches of paper made incorrectly or scraps from cutting paper to size. This re-use is termed "recycled or reclaimed waste fibers." Depending on the amount of waste paper used in the processing, the recycled content can vary from 5-70%.

De-inked paper, on the other hand, is paper which has previously been in the marketplace, reclaimed, de-inked, and then reprocessed. This process is being done to some degree by the Abitibi Mill in Thorold, Ontario.

Paper manufacturers do not indicate the amount of recycled and reclaimed and/or de-inked fibers which are present in their product as there has not been a demand for it.

Consumers can be fairly confident that some degree of recycling is done in their stationery but cannot tell how much, and whether its recycled or de-inked. Therefore, consumers do not really know what they are purchasing when they buy stationery products.

With the implementation of this recommendation, the consumer will be made aware of the availability of these products in the marketplace and may begin to ask for them.

Ruth Corobow

Approved, Dec. 7/81 Council Meeting

THIS WATER IS ONLY FIT FOR HUMANS.
IT'S POLLUTED!

82016, Darren Orr, Minnedosa.

WILDLIFE

J. B. Nickels

During 1981-82 the Committee examined issues as varied as night hunting, elk ranching, wood bison hunting, humane trapping and native hunting rights. Most efforts, however, concentrated on four topics, namely pollution, parks, wildlife habitat and endangered species.

POLLUTION

On the topic of pollution, the Committee has reviewed the adverse effects of certain pollutants, e.g., Endrin, on wildlife in the United States. Concern about possible pollution of Manitoba wildlife habitat centered on acid rain, Alcan and mosquito spraying. Such discussion resulted in the Wildlife Committee sponsoring a talk on pesticides, herbicides and spraying policies given on Nov. 3, 1981 by Mr. Hamish Gavin, Director of Environmental Protection Service, Environment Canada.

PARKS

On the topic of Parks, the Committee has reviewed the Grass River and Turtle Mountain Park plans. Responses to these plans were made first, through attendance at the Oct. 15, 1981 Parks Branch meeting; second through individual responses to Park's questionnaires, and third, through telephone contacts with the Parks Branch. A brief was submitted to Council on Dec. 7, 1981 and was approved with minor modifications. Since that time, the Committee has continued to be concerned about parks in general and the Grass River and Turtle Mountain Parks in particular. The general concern has to do with the controversy between using parks as public recreation areas (involving commercial development) versus protecting parks as wilderness sanctuaries (involving preserving rather than developing natural resources). The specific concern has led to the meeting held April 20 between the Committee and Gordon Jones and Art Hoole of the Parks Branch. At this meeting the representatives of the Parks Branch summarized their progress toward final plans and the Committee expressed its concerns about particular aspects of the preliminary plans. For example, the Committee members presented a united front against further expansion of roads and corridors into the hinterland to avoid endangering the Woodland Caribou and other wildlife through opening up public access to calving grounds and other wilderness areas.

WILDLIFE HABITAT

On the topic of wildlife habitat, the Committee has reviewed the issue of Crown Lands and their possible loss as publicly owned wildlife habitat through clearing operations and through sale to private parties. Another concern has been watershead policies, so a report titled "A Proposal for a System of Water Management in Manitoba" prepared by the Department of Natural Resources (May 1981), was distributed by the Committee to other technical committees of Council so as to promote a better understanding of the issue. The Committee has also been concerned about the effect of forest fires on wildlife and wildlife habitat. Work in all of these areas has been undertaken.

ENDANGERED SPECIES

On the topic of endangered species, the Committee has examined the Wildlife Act of Manitoba and recent Wildlife Branch activities to determine the feasibility of including certain species in the newly created "endangered" category. A list of such species has also been prepared in response to a request by the Membership Committee (Marilyn Letts) for use in the revision of the Council's information pamphlet.

Finally, the Board approved the submissions of three research proposals by the Committee for S.T.E.P. 82 funding. The proposals were later approved by S.T.E.P., each for the maximum of 16 weeks. I am sure that the Council joins with the Committee in expressing appreciation for receiving this assistance. One student, Anna Polonji, will be examining the effects of Crown Land expansion, disposal and land use on wildlife habitat. Another student, Michael Thornton, will be working on the current status, trends and problems including specific species under the "endangered" category of the Manitoba Wildlife Act. Finally, one student, Pat Martin, will be investigating the effects of the 1980 Wallace Lake forest fire on wildlife and wildlife habitat. The first two students will be under my supervision, the third student will be supervised by Committee member William Pruitt, Jr. and will be stationed at the Taiga Biological Station of the University of Manitoba.

* * *

Presented (REVISED) at May 14/82 Council Meeting

Brief: **Master Plans for Grass R. and Turtle Mt. Prov. Parks**

RECOMMENDATION:

The Manitoba Environmental Council recommends to its Minister that concerns be expressed to the Parks Branch of the Department of Natural Resources regarding the 1981 Draft Master Plans for the Grass River and Turtle Mountain Provincial Parks. Specifically, it is recommended that there be no further construction of roads to or utility corridors through the backcountry, no further establishment of campgrounds, cottages, and commercial recreational areas within the Parks, and no further expansion of hunting and timber harvesting within the Parks. Also, there should be no mining, commercial fishing or commercial trapping within the Parks. Finally, the public should be given at least three week's notice of meetings on the Park Masterplans and copies of the Plans should be made available at the time of the public notice.

BACKGROUND:

The master plans for the two parks include a proposed expansion (or consideration of expansion) of roads and utility corridors and the establishment of new campgrounds, cottages and commercial recreation areas within the Park boundaries. Such expansion will only serve to threaten the existing flora and fauna of the area by making wilderness locations (including lakes) easily accessible. The threat is particularly high in the Grass River Park, where the calving grounds of the woodland caribou can themselves be in danger due to further intrusion by the public into the backcountry.

Although hunting is presently practiced within both Parks, any extension may be detrimental to the existing wildlife populations. Careful studies on the wildlife populations before adoption of the Park Plans and careful wildlife management practices after their adoption will place strict limits on hunting in such sensitive areas. Trapping, though presently practiced in both Parks, offers Manitobans no economic or sports benefit and so many represent an inhumane and unnecessary way to deplete wildlife. Since commercial fishing tends to eventually create problems for sports fishing in nearby areas, the elimination of the former will benefit the latter.

Mining causes a threat to the wilderness environment because of pollution, destruction of wildlife habitat, public intrusion into the backcountry, etc. Timber harvesting, even with replanting policies, causes similar problems. These threats are particularly severe for the Grass River Park, where caribou and other wildlife species concentrate under delicate survival conditions. Although a limitation on further timber harvesting may protect these focal species, only an elimination of mining from the Parks will ensure that the quality of the environment and the robustness of wildlife populations will be maintained.

The purposes of draft park master plans is to inform the public about contemplated actions and to obtain public reactions to them. The public meeting in Winnipeg on the Grass River and Turtle Mountain Plans was publicized only five days before the meeting and copies of the Turtle Mountain Plan were not available until the meeting itself. Under such conditions the public cannot be adequately informed when it is most timely to be informed, namely, at an open meeting. The public will, therefore, not have a full opportunity to respond on the basis of complete information. At least three week's notice of meeting (with copies of the plans available at the time the notice is given) would help in this regard.

Wildlife Committee
J. B. Nickels, Chairman

Adopted, Dec. 7/81 Council Meeting

Brief: **Lake Manitoba Narrows Park**

RECOMMENDATION:

The Manitoba Environmental Council recommends to its Minister that he request the Minister of Natural Resources to initiate and pursue whatever steps are necessary to result in the creation of a small park, with picnic and boat launching facilities, adjacent to Provincial Road 235 on the West side of The Narrows of Lake Manitoba.

BACKGROUND:

The background information to this brief can be simply stated in point form as follows:

1. The Narrows of Lake Manitoba is an area of natural beauty and interest.
2. Access to the Lake at the Narrows should be guaranteed to present and future generations of Manitobans.
3. There is no wayside park, picnic or camping area, operated by the Government of Manitoba, anywhere within reasonable distance of The Narrows.
4. The East side of The Narrows is extensively developed on a commercial basis.

Barry Wild
Parkland Regional Chairman

Approved, Dec. 7/81 Council Meeting

ADVISORY COUNCILS

Bill Kennedy

The sixth joint meeting of the Federal/ Provincial Environmental Advisory Councils was hosted by the Environmental Council of Alberta at Banff, Alberta from May 31 through June 3, 1981. This continued the tradition of alternating meeting sites between eastern and western provinces as last year's meeting was held in New Brunswick (see Annual Report Nine: 1981 p.48).

This report will provide some notes on the meeting as the Proceedings have not yet been published by the Secretariat of the Canadian Environmental Advisory Council.

The first order of business was to review the actions taken by individual Councils with respect to the resolutions adopted by the previous year's meeting. It was apparent that most Councils present (P.E.I. was not represented) had forewarded them to their Ministers. The second item considered was the areas of concern to each individual Council and their effectiveness as advisors. Each Council provided the meeting with a presentation profiling their resource base and/or advisory capacity as well as the issues of notes in their respective province. What follows is a notated profile of each presentation.

Newfoundland

A large new advisory group has been established in Newfoundland. At present, they are concerned with the safe disposal of uranium tailings and are conducting hearings on offshore petroleum matters. Their representative stressed the need for providing advance information to the appropriate Minister and for establishing credibility through professional expertise.

New Brunswick

New Brunswick has a 13 member advisory council appointed by the Minister. Each member is paid a per diem rate. Its current concerns are shore-zone management of wetlands including a study of peat resources and the lowering of the freshwater table through increased use of water by fish processing plants. Although the long range transport of air pollutants is not considered a major issue, an air quality index was recently established to aid in monitoring the pulp and paper industry.

Nova Scotia

The Environmental Advisory Council in Nova Scotia has no full-time staff. This all volunteer organization has an annual budget of approximately $100,000. Environmental concerns include shoreline protection, the law of the sea conference and preservation of agricultural lands. The practise of using wrecked cars as a breakwater in shoreline management has been examined by this Council.

Quebec

Environmental issues in Quebec include air pollution, acid rain, forest haul roads, motor boats and coastal shoreline management. This council has plans to launch a major environmental impact study on dredging operations. Of particular note, is that Alcan has a representative on the Quebec advisory council.

Ontario

Ontario does not have an environmental council per se but two similar groups. One is a Waste Management Board composed of 12 non-technical advisors, the second is a Pesticides Management Committee, also composed of 12 members (all-technical) which reviews all pesticide materials in Ontario. No pesticides may be sold without the Committee's approval.

Ontario is currently in the process of undertaking three major environmental impact assessments: a) flood control for central Ontario; b) a waterfront park in downtown Toronto; c) construction of a provincial highway through the Holland Marsh. A conflict between two provincial Ministries arose over the Holland Marsh - Highway issue: new legislation was enacted under the Consolidated Hearings Act whereby land use conflicts will come under the juriadiction of a joint board which will hold hearings on conflicting uses.

Saskatchewan

This advisory Council is composed of 12 members representing the general public, labour, farmers and industry. Problem areas for the Council include money, manpower, and a lack of clarity around the issue of an ombudsman for the environment. The Council's concerns include control regulations for uranium tailings, acid rain, forest haul roads, and a parks policy for northern Saskatchewan. Parks Canada is trying to develop a Grasslands Park in southern Saskatchewan.

Alberta

Perhaps this is the most well funded environmental advisory council in Canada. Alberta's Council has a full complement of full-time staff, thus they are able to mount an extensive program of conference and information activities. Areas of concern include preserving the agricultural land base, noise pollution, fossil fuel generating stations, acid rain and hazardous wastes. The Minister placed a priority on understanding the acid rain problem and the transportation of air pollutants from northern Alberta to northern Saskatchewan. The handling of hazardous wastes has been regulated to the extent that carriers of hazardous chemicals must take specified routes. A recent conference to assess the Council's performance found that greater emphasis should be placed on reviewing present government policy and in taking new measures to improve public input.

British Columbia

Bill Venables, Assistant Deputy Minister of Environment attended the conference so as to make recommendations for an advisory council in British Columbia.

Canada

There are four main areas of Federal environmental concern: a) road construction in national parks; b) wildlife ranges in the Northwest Territories; c) strengthening forest fire fighting capabilities in all provinces; and d) acid rain.

The Manitoba presentation, Effective Advisors, was made by our Executive Secretary and is included in this report.

Throughout the rest of the meetings, delegates received detailed presentations on environmental issues. Topics included the Canadian perspective on the Global 2000 report, security of the agricultural land base, incremental environmental change (I.E.C.), and the effect of petroleum operations on Alberta's forests. A scheduled day-long ecotour of the foothills south of Calgary provided an opportunity to discover the beauty and diversity of this unique area. An extensive program of technical workshops allowed delegates to produce a number of comprehensive resolutions which were finalized at a final plenary session. These resolutions are attached.

* * *

Prepared August 20, 1982

IEC RESOLUTIONS

This Committee has defined incremental environmental changes (IEC) to be *those man made visible or invisible alterations to the environment which, when accumulated over time and/or space, have greater effect than any increment per se.* IEC's may lead to irreversible environmental conditions.

Be it resolved

1. THAT each event be placed within the long term dynamics of the environment with respect to superimposed cycles and other environmental fluctuations.
2. THAT more effort be put on identifying the nature, sources and magnitude of IEC's on biota and it must include additional research on the effects of making compatible the various data bases.
3. THAT wherever possible, proposed activities should include a probabilistic risk analysis.
4. THAT emphasis be given to follow-up monitoring of IEC's to evaluate previous predictions so as to improve forecasts for contemplated events.
5. THAT more public hearings should be encouraged to elicit anecdotal local information and to educate all agencies involved.
6. THAT standards and/or objectives for air and water be reviewed periodically to take account of IEC information.

PUBLIC PARTICIPATION RECOMMENDATIONS

General

That public involvement in the decision-making process begin early and continue throughout. The socio-economic implications of environmental policies and the environmental implications or socio-economic policies should be integrated in the total planning and decision process.

Mechanisms

That, depending on the type of hearing, but definitely in the case of judicial and quasi-judicial hearings, adequate financial and other resources be made available to intervenors to allow full participation; and feedback mechanisms be incorporated to ensure that participants know that their concerns are heard and considered even if not acted upon.

Assistance

That the Councils should help in actively exploring various means, both direct and indi-

rect, of having improved assistance provided to appropriate individuals and organizations.

Information

That, as a general principle, information collected by public servants (DOE, etc.), with the exception of clearly defined proprietory information, must be available to the general public. As a necessary part of access to information, it is also essential that a list of what information exists be available.

Legislation

That citizen input be sought at the appropriate draft stage; and that where any particular interest groups such as industry are consulted, so are the general public.

Security Agricultural Land Base

1. DATA BASE

A priority need is an improved and standardized data base. The C.L.I. (Canada Land Inventory) needs expansion and refinement, with priority to the agricultural inventory. C.L.I. needs expansion to include:

(a) Additional agri-climatic information
(b) Productivty indices
(c) Identification of suitability for crops and cropping systems.

The provincial and federal governments should co-operate to improve and standardize the data base. The Lands Directorate of the Federal Department of Environment should take a leadership and co-ordination role in improvement of the data base. Implementation will require federal-provincial co-operation.

2. AGRICULTURAL RESEARCH

There is a need to expand agricultural research and evaluation of production practices to identify the impact of long term sustainment and enhancement of agricultural productivity within environmentally appropriate and economically viable parameters. For example, there are fewer researchers on the effects of pesticides today than there were a decade ago, though the impacts of pesticides are matters of greater concern today than in the past.

Research should be directed towards the effects of present agricultural practices and the alternatives that could be adopted. The research approach should be underlain by the concept of stewardship that practices should be directed to turning land over to successors in as good or better condition than received. The focus of research should be to identify practices that would do so while still providing an adequate income to farmers. The federal and provincial Departments of Agriculture are the appropriate bodies to provide leadership in undertaking this research. Implementation will require strong provincial commitment.

3. INNOVATIVE TECHNIQUES

Many nations have adopted alternative policy approaches to the preservation of agricultural land. Various approaches such as sale of development rights, incentive and taxation programs have been developed with varying degrees of success. We believe that convening of a national workshop/conference to look at alternative approaches adopted throughout the industrial world would be extremely useful. The intent of such a workshop/conference would be to identify those techniques and approaches developed elsewhere that could be used in Canada, either directly or with suitable modifications. The product of such a workshop/ conference would be to identify alternative approaches to the preservation of agricultural land in Canada. The Canadian Environmental Advisory Council (C.E.A.C.) should arrange for the preparation of a discussion paper on innovative techniques in advance of a workshop/ conference. The workshop/conference should be convened by appropriate agencies (possibly CCREM) to indicate broad scale federal-provincial support for this approach.

4. SHORT TERM PROGRAM

Security of the agricultural land base is an immediate and urgent problem, because of the existing scale of it continuing if no action is taken and the severe consequences of continuation. Action can not wait for the completion of action identified in resolutions 1 to 3.

(a) The C.E.A.C. should be requested to prepare a prospectus on the security of the agricultural land base across Canada.
(b) There is a need to develop public awareness programs on the existing information base, directed to urban consumers, government departments, farm organizations and politicians. Such programs should be developed at many levels, federal, provincial, municipal, environmental councils, and wherever interest can be generated.

* * *

Advisors Effectiveness

J. J. Keleher

The skeleton of this presentation was formed last Friday; the muscles were developed while driving here from Winnipeg on Saturday and Sunday; the skin was applied late last night. Therefore no copies are available. You will have to pay attention if you wish to take in the substance of my views on this important subject. I hope you do because this paper has cost me a beautiful photograph of a trophy antelope at dusk that would have rivalled the Hartford stag.

Effectiveness of recommendations, including methods for improvement, is a topic that bears repetition at this meetings of Canadian environmental councils. The initial presentations were made last year at St. Andrews; mine dealt with the recommendations per se. The text is available in the Proceedings (p.50-53). Two sentences will summarize it. "The success of a recommendation is determined by three factors - the background information, scope, and post recommendation action or "follow-through" . . . The recommendation which has the best chance of adoption is one of implementable scope, originated by the Council itself, contains adequate peripheral material and is pursued to a logical conclusion."

Considered in the context of the communication theory, last year's presentation dealt with the signal. Only the naive would contend that the success of a recommendation (signal) is solely dependent upon its quality. So today, I wish to discuss the other vital components in communication - the sender i.e. the advisory council, the we; the receiver i.e the Minister, the advisee, the they; and the atmosphere i.e. the public, the media, the others. All these components are related to the success of recommendations and therefore are worthy of our attention.

The sender's (advisor's) effectiveness is related to others' perception of his image. If this were not so, expenditures for advertising in Canada probably would not be about 750 million dollars annually. Even among individuals, treatment varies in relation to clothing, speech, etc. Erving Goffman and others have substantiated this view. Where the advisor has a credible image, it will be more difficult for his advice to be ignored. Here is a supportive example.

The International Joint Commission held hearings on its Garrison Diversion Study Board report in Winnipeg on March 11 - 13, 1977. The Commission heard repeatedly then and previously that the potential introduction of exotic fish from the Missouri River watershred posed a serious threat to Manitoba's sport and commercial fisheries. One of the Study Board's proposed defenses against this threat was a fish screen. Many of us knew how difficult it is to make it an absolutely fail-safe mechanism. The first witness on the second day was Dr. Casmir Lindsey, from the University of Manitoba - an ichthyologist of international repute. Cass, with his twinkling eyes and greyish beard, made a calm and low key presentation - holding in the crux of his arm a jar of preserved gizzard shad. Following his talk, the Commission began to challenge the conclusions of its own Study Board as to the efficacy of the fish screen. That was the hour, in my mind, that the tide reversed itself.

When an advisory Council has a credible image, occasionally media support will occur. Recently our Council doubtlessly benefited from such action. Our position on several subjects including hazardous chemical wastes was reviewed by Marjorie Earl, a columnist of the now defunct Winnipeg Tribune. She concluded that such advice should be followed. Media support like this will, I believe, improve, over the long run, any Council's effectiveness.

The public's awareness of its environmental council is important for the effectiveness of the advice provided to its Minister. If the Council is virtually unknown in the community, it is easier for the Minister to ignore such recommendations. "Council who" the public may well say. Everyone is reluctant to oppose an acknowledged authority.

A positive image costs money. Reports can be typed. The same words, dressed up in type, with adequate illustrations make a better impression. In fact, may even lead to the report being read. The former Fisheries Research Station in London, Ont. found this out with its Progress Report Series. Secondly, public service announcements about a Council's activities probably have about a 1% chance of being used - then you have to consider if 3:00 a.m. advertising is acceptable. An ideal allocation of our Council budget would be in the following proportions: 1/3 to manufacture the word, 1/3 to publish the word, and 1/3 to advertise the word. This ratio eventually would dramatically increase our currently low batting average for recommendations.

Before considering the symbiotic relationship between the advisor and the advisee, I would like to revert to the subject matter of my first

presentation and provide a few remarks on the style of the message. As an editor, I chiefly have concerned myself with the technical content of our briefs. Are the statements correct? Discussion of agencies must be closely examined to ensure that the currently correct name is used. Exactitude of bibliographic references seems to be a dying concern for today's authors. Of course, the quality has ranged from inconsequential to extremely important but that usually is outside of editorial control. The technical content has been as good as I can make it and until now I have been satisfied with our briefs. Now I see a real shortfall - most of them entirely lack literary style. There is little pleasure or enjoyment in reading them - no sudden turn of phrase, few surprises in organization or development - in short "unquotable." No wonder we don't receive much media coverage.

The briefs are dull because their composition is the cold unemotional style of the scientist. They remind one of Bach's Brandenburg Concertos when what is required for effectiveness is Tchaikovsky's 1812 Overture. We recently stated that the Environmental Management Division "be equipped with vehicles designed to carry hazardous chemicals." That was the scientific content of our message. What I wanted to say was that the Division should discard its 19th century solutions for 20th century problems.

Driving by the Prairie Wildlife Centre near Swift Current on Saturday, my wife and I thought about the lowly ground squirrel. She said that they seemed to be on the increase. Then I remembered all those pesticides which blanket the crops of our central plains. So a slogan was born. "As the gopher goes, so go we." I like it because it is a truism clothed in an apparent absurdity. If we had a Nancy Mitford on our Council her style of poison penmanship would probably double or quadruple our effectiveness.

Now that my stylistic digression is completed, I would like to consider the interaction between a Council and its Minister. Is it Master-Servant, Peer-Peer or one of the others popularized by the late Eric Berne. Each Council will have to diagnose its own situation. Probably all variations have been present. Regardless of the actual situation, let us not forget that a bond is created which over time will affect both parties. Consider recommendations from the Minister's viewpoint. Can he afford to reject all of them? Probably not because then the advisors may quit. This is particularly true with volunteers. A previous Minister questioned the utility of his Council at his first public meeting with us. The response from a member was swift and pointed. "If you don't like what we are doing, tell us so that we can all go home since we have a lot of other things to do." The Council didn't quit but it adapted to the new directives while still retaining some of its previous activities. The skinnerian behaviour modification had operated to change both parties.

Obviously both the advisee and the advisor benefit if there is a varied mix of recommendations. At least some of them should be easily implementable. We might as well be Machiavellian about it. The Minister can say that he has accepted advice. The volunteer advisors can take pride and credit for achieving some changes. They will be buoyed up to tackle the hard issues resolvable only over the longish term, if that. Probably every Council should keep score on its recommendations. Grade each one from 0 to 100%, add and divide by the number of recommendations. What would you say are your Council's accomplishments i.e. what is its grade vis a vis recommendations this year, last 5 years, since inception? If you can answer these questions, then the next one is why is the score so low?

After I had been Executive Secretary for a few years, my son asked me, "How many laws have been changed as a result of the Council?" I had to say "None." Even now, in our informational pamphlet we list issues with which we have been involved rather than accomplishments. If Peter Drucker were our management consultant, he would say, "Declare bankruptcy, you have had no output."

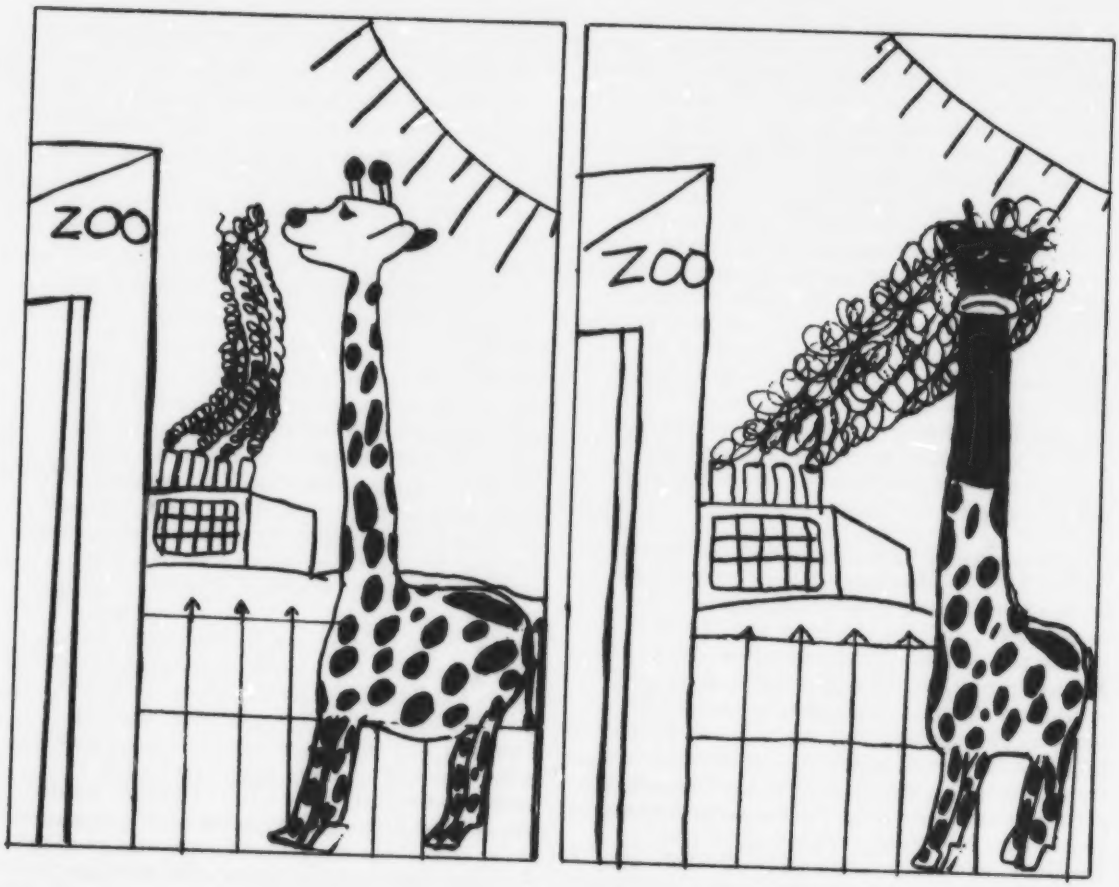
The last component to consider in the communications model is the medium through which the signal (recommendation) must pass. If radio reception is affected by the northern lights, why shouldn't recommendations be affected by its atmosphere, the public. Some of our recommendations have been too precocious. Our timing was bad. Our Wildlife Committee's brief on anti-hunting was so forward looking that it took nearly 2 years to get it approved by our own Council. Ten years ago, one could pass briefs about native violations of game laws. Today the public's sympathy, I imagine, is against hunting and for native people. Immediately after Stockholm there was a real shift towards recyling. The Club of Rome "predictions" about the finite nature of our resources were in full bloom. Where is recycling today? Little is heard about it. Can one purchase truly recycled stationery? The success rate of

recommendations has to be related to the public's perception of issues. An analysis of a questionnaire on our members' attitude to a variety of environment issues has just been completed. It grades 99 issues according to the amount that the rater would pay to have each instituted. The respondents are concerned with a quality environment. Although the questionnaire was not planned to formulate recommendations, it could be a useful vehicle for this. It could reveal the public's attitude to specific environmental issues and thereby direct Council to issues having public acceptance and thus lead to improved effectiveness.

To conclude, I hope I have convincingly demonstrated that effectiveness of a council's recommendations is dependent on 3 other major factors in addition to the recommendation. To improve one's batting average improvements could be sought in these areas. Recommendations per se are not the limiting factor for acceptance. Their reasons for rejection may lie in the sender, the receiver or the atmosphere.

Preparation of this paper benefitted from discussion with staff of the Environmental Management Division, namely Ms. Shirlee Kowalchuk and Mr. Norm Brandson. However, the results are entirely my own and have not been approved by the Council.

* * *



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RESPONSES TO BRIEFS

Basil Rotoff

It was most gratifying that the Minister, the Honourable Jay Cowan, came here to respond to our recommendations from a previous meeting. These responses are the feedback that we need to measure our effectiveness. We really don't know whether we're crying in the wilderness or actually achieving anything until we have some results, or at least some feedback, on our last meeting. Before we discuss the responses to our latest set of briefs, those arising from the Dec. 7/81 meeting, here are some responses to the recommendations adopted at last year's Annual Meeting which were submitted to the former Minister, the Honourable Gary Filmon. He responded to them in a letter dated August 24, 1981.

Among the briefs presented was a very extensive one on the use of renewable energy resources, known as the "Marks Report." This brief had about 20 recommendations in it. I won't be reading the responses to this brief here today because they are rather complex and are to be published along with the text of the "Marks Report" as part of our "Topics" Series.

As for the other briefs submitted to Mr. Filmon, there was a brief on the Environmental Management Division's Hazardous Chemical Wastes Program [Annual Report Nine: 1981 p. 26]. It was concerned with the lack of equipment to monitor and dispose of environmentally dangerous chemicals. The Minister's response was as follows.

The Environmental Management Division has ordered an additional vehicle expected for delivery within approximately one month, which will allow for complete separation of hazardous materials from driver and occupants. Hazardous chemicals are currently transported by means of the City of Winnipeg and RCMP bomb trailers. With respect to additional staff, an additional EMY [Employee Man Year] has been provided this year. The incumbent will have a specific background in chemistry and will have duties relating to safety training, seminars in conjunction with occupational safety and health branch of the Department of Labour. I believe this entire matter of incineration of hazardous materials, (including waste solvents) is being addressed as part of the review of the report and recommendation of hazardous waste management by Reid Crowther and Partners.

With regard to the brief on the proposed Aluminum Reduction Plant [Annual Report Nine: 1981 p. 29] the Minister gave the following reply. *Recently, the Manitoba Government announced an extensive environmental assessment procedure for the potash plant for Western Manitoba. It is expected that similar environmental procedures will be put in place for the proposed aluminum reduction plant. Departmental staff are aware of the potential hazards associated with fluoride emission from aluminum and have been in contact with other provinces and the United States to familiarize themselves with potential adverse effects. Public hearings will be an essential aspect of this environmental review process.*

The Wildlife Committee's brief on the Importing and Raising of Raccoon Dogs [Annual Report Nine: 1981 p. 46] elicited a very favourable response. The Minister stated that, *The Manitoba Government recently passed a regulation under the Manitoba Wildlife Act which prohibits import release and possession of raccoon dogs in the Province of Manitoba. Similar safeguards are currently in place in Saskatchewan and Ontario. I have conveyed your concern regarding the Federal Game Export Act to my colleague, the Minister of Natural Resources, whose department has primary responsibility on this matter.*

The Minister's response to the Advisory Council's Resolutions on Ecological Reserves [Annual Report Nine: 1981 p 51] is as follows.

The ecological reserves and the establishment of an ecological reserve coordinating committee is certainly worthy of consideration by myself as well as the Federal Minister of the Environment. My predecessor the Honourable A. Brian Ransom, took the initiative in encouraging the Environmental Management Division to incorporate this concept. I believe this concept is proving its worth more and more and I am prepared to forward your suggestion to the Federal Minister of the Environment at the upcoming Ministers of the Environment meeting.

This completes my review of the responses supplied to the Council by our former Minister. I would urge the new committees to examine government action for possible implementation of these responses.

Turning to more recent events, as I mentioned earlier, it is indeed gratifying to receive responses to briefs from the Honourable Jay Cowen in person. During his address earlier this afternoon [see page 5], Mr. Cowan

thanked the Council for the time and effort to enhance and protect the quality of the Manitoba environment.

The Minister provided the Council with responses to the following briefs approved at the Dec. 7/81 meeting.

a) Atomic Waste Disposal;
b) Environmental Information Concerning the Proposed Aluminum Reduction Plant;
c) Environmental Impact Assessment of Major Economic Projects in Manitoba; and
d) De-inked, Recycled Stationery.

The Minister also informed us that the brief concerning Manitoba Hydro Resources was referred to his colleague, the Honourable Wilson Parasiuk, Minister Responsible for Manitoba Hydro, for his consideration and reply.

It must be noted that the Minister deferred his response to the brief on Red River Water Quality until a later point in time and responses were not received for briefs concerning the Lake Manitoba Narrows Park or the Master Plans for Grass River and Turtle Mountain Provincial Parks which were also approved at the Dec. 7/81 meeting. Another item of outstanding business is a response for the brief on the Administration, Allocation, and Control of Water and Land Resources in Manitoba [Annual Report Eight: 1980 p. 58].

Mr. Chairman, this then concludes the responses to briefs.

* * *

Presented (revised) at May 14/82 Council Meeting.

MEMBERSHIP

J. F. Palamarchuk

In this our tenth anniversary year, we are happy to report that we do have a full quota of members (100) and even a waiting list of a few. Also, we have a fairly well balanced ratio between rural and urban members, (rural response was very favourable). We do maintain a fair balance between organizational representatives and individual citizens (Table 3). All this was possible through the co-operation of the Council members who suggested environmentally oriented people for our consideration. We hereby acknowledge our appreciation.

The membership committee this past year was fortunate to obtain two very energetic and dedicated young people, Mrs. Pat Johnstone and Mrs. Marilyn Letts who tirelessly have worked on a heavy schedule, consisting of the following three items.

1. Preparation of the revision of the Council pamphlet. The text has been approved by the Board. Search for outstanding illustrations of specific rare and endangered fauna and flora has been underway for some time and should be completed soon.
2. Procedures for reappointment on expiry dates have been developed, taking into account membership participation and members wishes regarding reappointment. These procedures include communication with members, committee chairmen and Council organizations, a time consuming task as most of you will realize.
3. Preparation and analysis of an organizations questionnaire to update our statistics on them and to increase co-operation between them and us. The results of the questionnaire were circulated at the Dec. 7th Council meeting.

Table 3 Council Representation
(Data as of March 31, 1982).

	I[a]	O[b]	T	%
Males	47	32	79	81
Females	8	10	18	19
Total	55	42	97	100
Region				
Central Plains	0	1	1	1
Eastern	2	4	6	6
Interlake	0	4	4	4
Northern	2	3	5	5
Parkland	5	1	6	7
Pembina Valley	1	4	5	5
Western	3	0	3	3
Winnipeg	42	25	67	69
Total	55	42	97	100

a: Individual member
b: Organization member

We have subdivided responsibilities between us, with Mrs. Letts being responsible for individual citizen membership and performance of secretarial duties. Mrs. Johnstone looked after organizational membership and analyzed the response to the relevant questionnaire. Together we worked on the pamphlet. We met regularly every month and some of us, when necessary, even more often. I am specifying all this "on purpose" and as a tribute to the staff, to properly appreciate devotion of volunteer efforts (without compensation) for the cause. In this day and age, this is a rare species and may I add on an "endangered" list. Needless to say the Committee sincerely appreciates the constant help, advice and expertise of our Executive Secretary, J. J. Keleher.

Of particular interest is the recent adoption (April 23, 1982) of an automated process for compilation and updating the Council's membership list. This word processing system will expedite the process of changing addresses, telephone numbers, etc. of members and should all but eliminate errors previously incurred when the list was generated by a manually operated typewriter. Other benefits of the system when it becomes completely functional will be a "speed-up" in the processing of appointments to Council.

This brief report, Mr. Chairman, is concluded and is, therefore, open for discussion.

* * *

Presented at May 14/82 Council Meeting

ORGANIZATIONS QUESTIONNAIRE

Pat Johnstone

A questionnaire, along with a letter of explanation from the Chairman was sent on Sept. 30th, 1981 to each of the 42 organizations with representation on the Manitoba Environmental Council to obtain information and to strengthen the ties between Council and these organizations. A second letter was sent by me on Oct. 20th requesting immediate response from those who had not yet replied. On Nov. 12th efforts to contact by telephone the remainder of the non-replying organzations proved generally non-productive. As of Nov. 18th (the "cut off" date to enable the compilation of the data) 26% had failed to return the questionnaire. This analysis will be based on the information received from 31 or 74% of the organizations.

There are 24,278 members in organizations and 303,120 persons represented by organizations. Nine organizations represent an indeterminate number of persons, eg. Citizenship Council of Manitoba - 64 organizations.

Comparisons of the replies concerning categories with the Council's category list in its pamphlet show that eleven coincide while the remainder indicate discrepancies.

Twenty-one organizations reported having publications including newsletters. Council should encourage representatives to utilize these publications to announce open forums and major concerns of the Council.

Half of the representatives report to their organizations on Council activities at monthly or executive meetings, usually verbally; 6 report at annual meetings and 3 use their newsletters for reporting (question probably misunderstood).

Few organizations' members are made aware of Council activities i.e. open forums. Fifteen representatives give information at meetings, usually verbally; information is placed in 10 newsletters, and 4 send memos to members. Again, the more extensive use of their publications would seem the answer to better communication. Eighteen organizations are aware of the availability of cartoons.

The most important finding of this mini project, in my estimation, was the failure of 11 organizations to return the questionnaire. This could be construed as lack of interest on either the part of the organization or its staff person e.g. executive director. It could also indicate poor communication within these organizations regarding responsibility and co-operation.

* * *

Presented at Dec. 7/81 Council Meeting

PUBLICATIONS

Donna Blight

The Committee during the fall term concentrated on its top priorities (short term goals). The three major happenings were the co-editing of all manuscripts, the approval of the institution of a new series called "TOPICS," and the use where possible of the word processing machines.

The new "TOPICS" series will alleviate the necessity to place published items either in the annual report or in the "Study Series." The first subject to be included in "TOPICS" will be J. B. Nickel's *Environmental Quality Report*. Other material contemplated for the series will be the revised Council pamphlet and Don Mark's report on *Legislative Land Use Controls: Management of Energy Producing Lands*.

Use of wherever possible of the word processing machines will eliminate the numerous revisions with which drafts are subjected. For example, the 10th Anniversary Celebration forum will be done by this method.

Annual Report Eight: 1980 was published Friday, Oct. 30th, 1981 and has been distributed to Council members. However, its general distribution has been temporarily deferred because of the 10th Anniversary Celebration. The Board of Directors commends, the committee, the contributors, and Mr. J. J. Keleher for the reports, excellent content, appealing format and the effective, first time use of other than black and white illustrations.

The major goal of this committee is to eliminate the backlog of outstanding manuscripts. With the anticipated support of the Board the Committee has established a target date of March 31st, 1982 for their printing. This will be achievable with the concerted effort of the authors and the secretariat. This is a budget necessity.

One focus of the three fall meetings has been on the cover design of the new series titled "TOPICS". The truly aesthtic and appropriate draft cover designed by Professor Dore has been approved by the Committee.

The perennial favorite cartoon contest is now under the direction of the Education Committee. We wish this committee success with this important and pleasant task.

Some of our long range considerations are:

i. Compiling a list of serial publications from other sources.
ii. Resource bibliography
iii. Council Manual (an operational manual with council and committee guidelines)
iv. A Council calendar

The Publications Committee wishes to thank the Department of Consumer and Corporate Affairs and Environment for an extended newsletter reporting on staff activities and thereby providing additional information to council.

The frontispiece of Annual Report Seven: 1979 "Cultural and Environmental change in Manitoba during the past 1200 years" has been loaned to the Historic Resources Branch, Department of Cultural Affairs and Historic Resources for an intended publication on a "Layman's Guide to Manitoba Archeology." It is very reassuring to see our original work being utilized by others.

In closing I think it is important to consider the future direction of the Committee. Is it meeting the needs of the Council? Perhaps there are important tasks which we as a committee are not performing or there are areas which should be considered for the future. Perhaps the Committee should include public relations which would deal with the communication and dissemination of the philosophical views of Council to the scientific community, the administrators, the politicians and the general public. The Committee 's name should logically be changed from "publications" to "communications" to emphasize its expanded scope.

I wish to thank Mr. David Hatch, Dr. A. C. Maniar, Mrs. Gwen Parker, Mr. Denis Ringland, Mr. Gunter Schoch, and Mr. J. J. Keleher for their active participation.

* * *

Presented at Dec. 7/81 Council Meeting

Early in 1982, a publication crisis became apparent because of the backlog of manuscripts and because proposed deadlines were not being realized. The Committee decided to eliminate the existing backlog by publishing first those manuscripts nearest completion. This sequence later was overruled by the Board who placed Annual Report Nine as the top priority (Table 4). A further approach taken to accomplish this was to eliminate the use of theme photographs. It was submitted for tendering to Queen's Printer on April 7th and the first galley sheets were received on May 6. It is expected that this will be the quickest time in the history of the Council for the publication of its Annual Report. However, this action effected an immediate but short term gain.

Table 4 Council Manuscripts Status (May 13, 82) as Priorized by Board (Feb. 3, 82)

Series	Subject	% Complete[a]		Editor(s)
		Text	Figs	
Report 9	Annual Report Nine: 1981 [80/81]	100[b]	100[b]	J.J.Keleher
Topics 1[c]	Environmental Quality Report	95	None	B. Kennedy
Study 15	Southern Indian Lake	98	85	D. Hatch & J.J.K.
Study XX	Hazardous Chemical Wastes	75	0	G.R.B. Webster & J.J.K.
Study XX	Red River Flooding	50	0	B. Rotoff & J.J.K.
Study XX	Environmental 70's	0	0	E. Sellers & J.J.K.
Topics 2	Council pamphlet (3rd ed.)	100	10	Membership Committee
Topics XX	Garrison Div. Bibliography	0	0	J. Warrener[d] & J.J.K.
Topics XX	Leg. Land Use Controls	90	None	D. Marks, B. Rotoff, & J.J.K.
Report 10	Annual Report Ten: [81/82]	0	0	E. Sellers & J.J.K.

a: of manuscript; Manuscript then sent to Queen's Printer for tender, after tendering about 35 working days to publication.

b: half of galley received May 12.

c: Cover design (2nd) by Prof. E. Dore received May 12. Same design for rest of series.

d: Technical Advisor, Clean Environment Commission.

It was deemed necessary to expedite these publications as the serious backlog was hindering the work of the Council. More importantly, the Publications Committee supported the resolution to seek secretarial assistance during 81/82 for the Executive Secretary in order to allow him to devote a greater percentage of his time to Council publications. Undoubtedly, the delay in acquiring this help will mean further publication delays.

We're happy to report that Mr. Keleher now does have aid. Mr. Ed Sellers has been of great assistance to the Executive Secretary in the preparation of this annual meeting. Mr. Sellers started May 3rd and will be assisting in the publication of the Annual Report #10, so hopefully we'll be able to keep the annual reports moving.

The objective of the Committee always has been to publish the Annual Reports within six months of the Annual Meeting. Annual reports, if not published within a reasonable time (3 to 6 months), lose their effectiveness although they still provide reference material. We are trying to reduce the time lag for Annual Reports by having reports submitted in advance of the year end. Strides have been made to achieve this goal by having regional chairmen report in two stages - September to December 1st and from December 1st to March 31st. This will not only speed up the production of the Annual Reports but will also improve its contents. One final method adopted to speed up publications has been the use of word processors for all manuscripts. While we originally utilized a private firm for the work we are now taking advantage of the Word Processing Centre at the Legislative Building. The eventual aim is to use a telecommunications link between the Word Processor and the "publisher". This will eliminate proof reading of the galleys.

The idea of having a co-authorship for studies has not had a fair chance of becoming effective because of the altered sequence of publishing. The Executive Secretary being co-author of most of the Council's publications has direction from the Board which establishes his current priority. Therefore, on occasion, the Executive Secretary's other duties must often take precedence over priorities of the technical committees. For example, the preparation of the Hazardous Chemical Waste forum publication has had to be deferred several times because of other Council activities, such as the December 1981 meeting and 10th Anniversary celebration. Another glaring example is the Red River Flooding forum. There have been numerous

requests for this material by the Red River Valley International Citizen's Flood Control Coalition, Inc. (RRVICFCC) but it cannot be released until it is published. The Coalition is also involved in Red River flooding remedial measures (see Winnipeg Sun, April 14, 1982). Forums to be of any value should be published immediately.

Publications are like icebergs, people only see the finished product (the tip) but usually do not realize the the extensive and skilled work required to bring them to fruition. We are fortunate to have a skilled editor whose expertise has been demonstrated repeatedly over the past ten years but it is unfortunate he is not allowed to devote more of his time to the editing, publishing and delivering of the finished product.

Short term goals and priorities have been mentioned, but I strongly urge that the Council be cognizant of the Committee's long range objectives. Four long range objectives are: to produce an operations manual; to consider whether the Publications Committee should reorganize into a Communications Committee with three sub-committees — publications, data retrieval, and library and public relations; thirdly, compiling a list of serial publications from other sources; and finally, preparing a resource bibliography in co-operation with other institutions such as the Legislative Library and the University of Manitoba Engineering library. There is no doubt that the awareness of the existence of desirable loan material will be affected by computer retrieval methods.

I have reported on the situation as I see it, trusting that I have been objective. While the backlog of Council publications has been a continuing concern with the Committee, it is accurate to say that the Manitoba Environmental Council is the most prolific publisher of Manitoba oriented environmental material. The quality of the published manuscripts reflects not only the professional standards of Council members but also the participants of the forums. This is a real satisfaction to me as I am sure it is to the rest of the Committee.

In closing, I would like to thank members of the Publications Committee, namely, Professor Dore, Gunter Schoch, Gwen Parker, David Hatch and J.J. Keleher for their assistance so that this year has been a pleasurable as well as valuable learning experience in problem solving and committee work.

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Presented at May 14/82 Council Meeting

CARTOON CONTEST

Ron Phillips

Through the diligent efforts of the Education Committee and our Executive Secretary, the Council's Environmental Cartoon Contest was successfully resurrected this year after having undergone a one-year hiatus. In order to effect this renaissance, it was decided that the contest should be transferred from the Publication Committee's jurisdiction to that of the Education Committee. This move made a great deal of sense in that, the vast majority of cartoon submissions came from within the school system and the Education Committee has had, heretofore, a lesser work load than the Publications Committee.

The contest seems to have rebounded close to its prior stature in terms of volume of submissions. This year, 435 entries were received compared with 483 for the 1980 contest. This represents only a 10% drop in overall response. It is also interesting to note the change in terms of the number of entries per group. For instance, the number of entries received for the open and Gr. 10-12 categories are significantly lower than those of past contests. (See Table 5)

Table 5 1982 Environmental Cartoon Entries and Previous Data

Category	1982	(%)	1977-1980[a]	(%)
Open	7	(2)	37	(6)
Gr. 10-12	6	(2)	30	(5)
Gr. 7-9	102	(23)	202	(34)
Gr. 4-6	320	(73)	319	(55)
Total	435	(100)	588	(100)

a: Total average — for individual years, see Annual Report Eight: 1980.

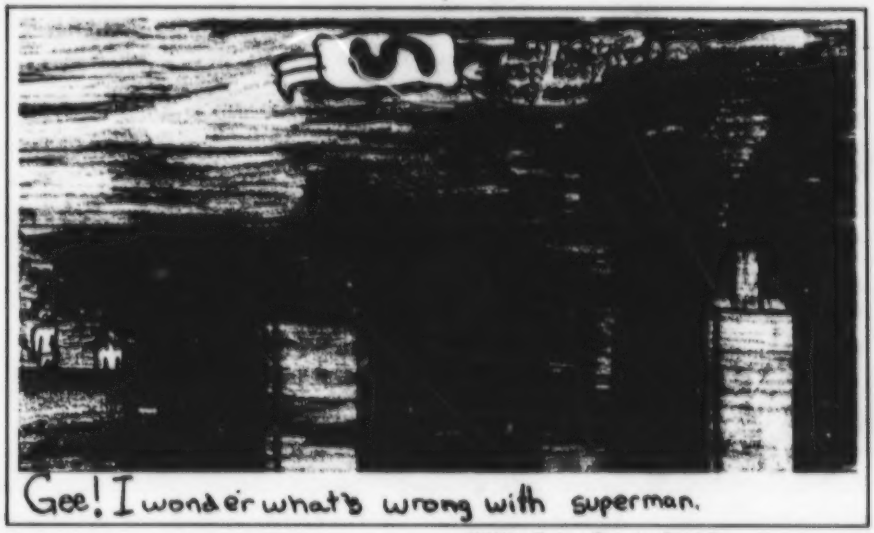
The contest adjudicators Mr. Jan Kamienski, editorial cartoonist for the Winnipeg Sun; Dr. Harvey Williams, President of the Manitoba Naturalists Society; and Mr. Fred Yeo, representing the Winnipeg School Division, encountered a variety of environmental topics, including the transportation of hazardous chemicals. Winning selections differed from those of previous years in that the majority were submitted by individuals outside the City of Winnipeg. Contest winners included residents of Arborg, Brandon, Grandview and Minnedosa, as well as, two residents of Winnipeg.

In addition to newspaper advertisements, a poster describing the contest and a postcard of contest rules were distributed to all school principals in Manitoba. Hopefully, future contests will be more fully promoted so that both the Council and the public receive the maximum benefit available from this important educational activity.

In showing our appreciation to those who were selected as winners, the Council would now like to congratulate and reward each of the victors. It is now my great pleasure to call on the Minister responsible for Environmental Management, the Honourable Jay Cowan to present the awards to the 1982 Environmental Cartoon Contest winners.

* * *

Presented at May 14/82 Council Meeting



82032, Jayne Bowie, Brandon.

CARTOON WINNERS

Hon. Jay Cowan

It is my pleasure and my honour to be here this morning to be able to present some of the cheques to those winners who are present and to congratulate in their absence those who couldn't make it here today. I've had an opportunity to look briefly at some of the cartoons and I was impressed by both the quality of the workmanship and the insights which obviously went into the development of those cartoons. It is important to realise that there are many ways to bring our story across to the general public. Politicians tend to rely far too often on long speeches, sometimes boring, sometimes tedious. As members of the Environmental Council I know you rely very heavily on your research and your briefs. The children who have participated in the cartoon contest, those fortunate enough to win and those who were not fortunate this time but may well do so in the future, have brought another perspective, an entirely legitimate and youthful perspective, to putting that story before the public. It is an honour and a pleasure to provide to the winners some acknowledgement of their fine work. I am going to call upon the individuals to come forward in the order of their awards.

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Presented at May 14/82 Council Meeting

Table 6 1982 Environmental Cartoon Contest Winners

Category	Prize ($)	No.	Name	Location
Open	1st (150)	82001	Karen O'Bryne	Winnipeg
	2nd (50)	82002	George F. Wauchope	Winnipeg
Gr. 10-12	1st (50)	82008	Debbie Watson	Brandon, Crocus Plains Secondary
	2nd	No award		
Gr. 7-9	1st (50)	82015	Robert Bridger	Grandview, Grandview School
	2nd (25)	82016	Darren Orr	Minnedosa, Tanners Crossing School
Gr. 4-6	1st (50)	82031	Darwin Smolinski	Arborg, Riverton Elem. School
	2nd (25)	82032	Jayna Bowie	Brandon, Rivers Elem. School.

1982 Cartoon Winners with Hon. Jay Cowan: (left to right) Debbie Watson, Karen O'Byrne, Darren Orr, Darwin Smolinski.

A BUDGETARY TRIAD

J. J. Keleher

As the third last item on this daylong agenda, I feel that in order to hold the audience's attention, my topic should be a popular one, e.g. sex, religion, or money. The first two appear inappropriate for an environmental council so money is the chosen category. It could be on interest rates, its declining worth, or its budgetary aspect. Mr. Bouey appears to be the expert on interest, everyone knows its rate of decline, leaving me the last specified alternative. This then is my subject, the budgetary aspect of our Council's activity. My strategy is to present a hypothesis and invite you to critique it. This should be an offer you can't refuse.

My thesis is that, regardless of the amount of our budget, we should divide it into three equal amounts and expend each third on a different aspect of any one of our specific activities. Council briefs could be used as an example, although the thesis holds equally true for our forums or cartoon contests. Having stated that the budget for any activity, or the total appropriation for that matter, should be split into thirds, I will now reveal the purpose of the expenditure for each segment of this triad, after this short digression.

Three is a significant number. There is the Trinity - Father, Son and Holy Ghost. A syllogism has three parts and, I am told, there are ménage à trois. According to Menninger (1969), three equals "many". The Egyptians and Chinese express "many" by using three symbols of an object, thus water is 3 waves and a forest is 3 trees. Menninger believed that "three" is "a step across the threshold of darkness . . . out into the prosaic but clear and bright light of practical life."

Having hopefully piqued your interest in threes, let me delay no longer in providing the purpose of each third of our expenditures for a Council activity, e.g. brief. The first third should be devoted to creating the brief, the second third should be spent on writing the brief and the remainder on promoting the brief.

This percentage allocation of funds is necessary in my opinion in order to achieve an effective brief. There is no point in generating outputs unless their effectiveness is an objective. I stress effectiveness rather than efficiency as an objective because the latter

cannot be applied to volunteer organizations as stressed in Drucker's 1974 magus opus. Has this Council rationalized any of its allotments from the first one in 1971 to the tenth one presented today? —No. Moreover, neither have the other members of the environmental troika, the Environmental Management Division, the Clean Environment Commission or countless other agencies that could be named. Most of the budgets just grow. Probably, they were increased or decreased by an across the board percentage.

Here is a personal example from research, showing how dispropriate the allotment of funds can be to the various aspect of a single project. The then Fisheries Research Board of Canada initiated a twenty-year study (1945-64) on Great Slave Lake fisheries to learn how exploitation affects virgin stocks (Kennedy, 1945; Keleher, 1968). The staff usually consisted of a biologist, two technicians and numerous summer university students (45 different ones during the study period). A permanent field station had to be maintained; summer and winter lake transportation effected (yawls, 45' boat, STENODUS, Bombardier.) Think of the cost for data collection - in other words to create the data base.

Yes, a host of fine publications and some of mine were the eventual results (cf. Marshall, 1975). But the proportion of time (which is money) in the field far exceeded the monies expended in writing up the results and virtually nothing was done to promote them. The ratios probably were in the order of 80:19:I. I now conclude that the project funding was disportionate. The project would have been more more effective if much more emphasis had been placed on the preparation of publications and attention paid to promoting the findings. This is not an isolated example.

We have heard many fine briefs here today. How much was expended on data collection? Probably the briefs, like this talk, were written in an evening or less. If past experience holds, they will receive little if any funding for promulgation. Effectiveness is the objective of Council's activities. The most certain way to achieve this is to expend our funds equally among creating the activity, publishing the activity and promoting the result. I welcome your critique now or later. Thank you.

Literature Cited:

Drucker, Peter F. 1974 Management: tasks, responsibilities, practices. Harper & Row, 839 p.

Keleher, J. J. 1972 Great Slave Lake: Effects of expoloitation on the salmonid community: J. Fish. Res. Bd. Can. 29: 741-753

Kennedy, W. A. 1956 The first ten years of commercial fishing on Great Slave Lake. Bull. Fish. Res. Bd. Can. No. 107, 58 p.

Marshall, K. E. 1975 An index to the publications of the staff of the Freshwater Institute, Winnipeg; the Biological Station and Technological Unit, London; and the Central Biological Station; Winnipeg; 1944-1973. Can. Fish. Mar. Serv. Tech. Rep. 505: 94 p.

Menninger, Karl 1969 A cultural history of numbers. The M.I.T. Press Cambridge, Mass. 480 p.

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Presented at May 14/82 Council Meeting

NOMINATING

Basil Rotoff

The Board of Directors, at its meeting of Mar. 6, 1982, elected the following nominating committee: Prof. Basil Rotoff, Chairman; Mrs. U. A. Grant, and Dr. David Punter. The committee's slate of executive officers and regional chairmen was delivered for consideration at the May 14, 1982 Annual Meeting. At that time, no nomination had been made for the position of Secretary but all other nominated persons were elected as proposed.

During the course of the Annual Meeting, the Council affirmed Gunter Schock as Secretary and elected Donna Blight to the position of Assistant Secretary. This departure from previous practise was necessary in order to adhere to the Council Bylaws [see Annual Report Nine: 1981, p. 79, Article VII, 3, ii; and 8, iii]. The revised slate of elected officers for the 1982-83 term is as follows.

Chairman —	Bill Kennedy
V/Chairman —	A. C. Maniar
Secretary —	Gunther Schock
Asst. Secretary —	Donna Blight
Central Plains —	J.A. Knight
Eastern —	R. D. Howard
Interlake —	Bill Aitken
North —	Ed Johanson
Parkland —	B. Wild
Pembina —	Betty Pawlicki
Winnipeg —	J. F. Palamarchuk

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Approved, May 14/82 Council Meeting

MEMBERSHIP

HONOURARY MEMBERS

Honourable Gary A. Filmon
Minister of Consumer and Corporate Affairs and Environment
(To Nov. 29, 1981)

Honourable Jay Cowan
Minister responsible for Environmental Management
(From Nov. 30, 1981)

Mr. J. E. Mason
Deputy Minister, Dept. of Consumer and Corporate Affairs and Environment
(To Dec. 2, 1981)

Mr Dale F. Stewart
Deputy Minister, Northern Affairs; Environmental Management
(From Dec. 3, 1981 to Jan. 21, 1982)

Mr. Ron McBryde
Deputy Minister, Northern Affairs
Workplace Health and Safety and Environment
(From Jan. 22, 1982)

Dr. W. George Bowen
Assistant Deputy Minister
Dept. of Northern Affairs; Environmental Management

Miss Catherine Howlett, Reg. N.A.P.
Parliamentarian

* * *

COUNCIL MEMBERS

(Unless noted, membership is for period April 1, 1981 - March 31, 1982; asterisk denotes "charter" member)

Dr. P. W. Aitchison, Winnipeg*

Dr. P. W. Arntfield, Winnipeg

Mr. M. S. Antonation, Shoal Lake
(To March 19, 1982)

Mr. W. Aitken, Arborg

Dr. Suzanne Bayley, Winnipeg
(From Sept. 15, 1981)

Dr. Allan Beaven, Winnipeg
(To July 30, 1981)

Dr. William Bell, Winnipeg*

Mr. C. P. Bennett, Winnipeg

(Mrs.) Donna Blight, Winnipeg

Mr. H. Bloy, Winnipeg*

Mr. Doug Boreska, Carman
(From March 16, 1982)

Mr. Ivan Brown, Miami

Dr. Tony Buchner, Winnipeg
(From Sept. 30, 1981)

(Mrs.) Nancy Cornish, Brandon
(To July 28, 1981)

Ms. Ruth Corobow, Winnipeg
(From April 3, 1981)

(Mrs.) Jo-Anne Crowe, Winnipeg

Miss Yong-Cha Cho, Winnipeg
(From Sept. 15, 1981)

(Mrs.) Judy Croy, Stonewall
(From March 16, 1982)

Mr. R. A. Dale, Pinawa

Councillor Lloyd Davies, Selkirk

Mr. David B. Dawes, Winnipeg

Mr. R. DeMeyer, Oak Bluff

Mr. Dennis Dempsey, Winnipeg
(To Oct. 22, 1981)

Mr. Harold Driedger, Winnipeg

Mr. Norman Edie, Dugald

Mr. Wes Finlayson, Winnipeg
(To May 28, 1981)

Mr. Douglas Fletcher, Carman

Mr. P.J. Fogarty, Thompson

Mr. Rod B. Fowler, Winnipeg

Four Nations Confederacy, Winnipeg
(From April 1, 1981)

Mr. Klem Froning, Winnipeg

Mr Dale F. Fuga, Winnipeg

Mr. Timothy Fultz, Winnipeg

Mr. Roger Glassco, Winnipeg
(From July 28, 1981)

Mrs. U.A. Grant, Winnipeg

Mr. Gerald D. Harder, Carman
(To March 16, 1982)

Mr. David Hatch, Winnipeg

Mr. Colin Holbrow, Winnipeg
(To April 1, 1981)

Mr. R.D. Howard, Carman

Mr. F.J. Humphries, Winnipeg

Mr. Bob Imrie, Flin Flon

(Mrs.) Patricia Johnstone, Winnipeg
(From May 15, 1981)

Mr. Ed. Johanson, The Pas
(From March 19, 1982)

Mr. Crawford Jenkins, Winnipeg
(From May 11, 1981)

Prof. F.M. Kelley, Winnipeg*

Mr. Bill Kennedy, Winnipeg
(From May 8, 1981)

Mr. J.A. Knight, MacDonald

Mr. Onno Kremers, Winnipeg

Dr. A.M. Lansdown, Winnipeg

Mr. R. Lepischak, Neepawa
(From May 15, 1981)

(Mrs.) M. Letts, Winnipeg
(From June 18, 1981)

Dr. A. R. Lockery, Winnipeg
(From May 15, 1981)

Mr. E. Lovelace, Winnipeg

Mr. Harold MacDonald, Winnipeg

Mr. J.A. MacDonald, Brandon*
(To Aug. 11, 1981)

(Mrs.) Rosemary Malaher, Winnipeg*

Dr. A.C. Maniar, Winnipeg

Dr. Diane Malley, Winnipeg

Mr. Oscar Mallory, Winnipeg
(To May 15, 1981)

Ms. Jane Mauer, Winnipeg

Mr. Lewis McCall, Winnipeg

Mr. Tom McLauchlan, Winnipeg

Mr. Bill Morgan, Gimli
(From Oct. 22, 1981)

Dr. D. Muir, Winnipeg

Mr. Wayne Neily, Winnipeg

Mr. Terence Gene Neraasen, Ste. Agathe
(From Sept. 15, 1981)

Mr. Bohdan J. Palamarchuk, Winnipeg

Mr. J.F. Palamarchuk, Winnipeg*

(Mrs.) Gwen Parker, Ste. Agathe*

Mr. H.N.M. Patterson, Winnipeg

(Mrs.) Betty Pawlicki, Morden

Mr. Alex Penman, P.Eng., Winnipeg

Mr. Roland Phillips, Winnipeg

(Mrs.) Violet Ploshynsky, Ethelbert
(To Aug. 11, 1981)

(Mrs.) Joanne Pritchard, Winnipeg
(To March 16, 1982)

Dr. William O. Pruitt, Jr., Winnipeg*

Mr. Gordon Pullan, Winnipeg

Dr. David Punter, Winnipeg

Mr. Lloyd Rattai, Pinawa

Mr. A.H. Richardson, Thompson*

Dr. Carl Ridd, Winnipeg

Mr. Denis M. Ringland, Winnipeg

Mr. Joe Robertson, Dauphin
(From Feb. 4, 1982)

Dr. I.M. Rollo, Winnipeg

Mr. John L.R. Ross, P.Eng., Winnipeg

Professor Basil Rotoff, Winnipeg

Dr. Richard Rounds, Brandon

Mr. Walter Rybuck, Winnipeg
(From May 28, 1981)

Mr. Ivan Sabesky, Winnipeg
(To Aug. 11, 1981)

Mrs. R. Schilling, Winnipeg
(To June 18, 1981)

Mr. Gunter A Schoch, Winnipeg

Professor H.J. Selwood, Winnipeg

Dr. Jennifer Shay, Winnipeg

Mr. Eugene Sheremeta, Winnipeg

Mr. S. Skrypetz, Morden
(To July 2, 1981)

Dr. C. Stadel, Brandon

Dr. L.J. Stephen, Dauphin

(Mrs.) Karen Stonyk, Winnipeg

Mr. Chris Sundevic, Thompson

Mr. Rakesh Syal, Winnipeg

Mr. George M. Takashima, Winnipegosis

Mr. W.H. Toews, Lowe Farm
(To May 11, 1981)

Dr. W.J. Turnock, Winnipeg

Mr. Walter Von Schoenhausen, Winnipeg
(To May 15, 1981)

Mr. H.A.H. Wallace, Winnipeg*

Dr. C. Peter Warren, Winnipeg

(Mrs.) Olga Weber, Winnipeg
(From Sept. 15, 1981)

Dr. G.R.B. Webster, Winnipeg

Rev. Murray Westrob, Swan River
(From Sept. 15, 1981)

Mr. Barry Wild, Winnipegosis

Dr. Harvey Williams, Winnipeg

Mr. Irwin H. Wiseman, Winnipeg

* * *

ADVISORS

The Council wishes to acknowledge the technical assistance from the following persons during the period covered by this report:

Prof. E. Dore - Winnipeg

Mr. Thomas W. Drew - Smithville, Ontario

Dr. L. C. Dugal - Winnipeg

* * *

ORGANIZATIONS

(Unless noted, membership is for the period April 1, 1981 to March 31, 1982)

Association of Manitoba Archaeologists

Canadian Manufacturers Association

Canadian Society of Mechanical Engineers (Man. Region) (To Nov. 5, 1981)

Citizenship Council of Manitoba

Canadian Forestry Institute (Man. Div.)

Consumers Association of Canada

Ducks Unlimited (Canada)

East-Man. Regional Development Corporation

Entomological Society of Manitoba

Four Nations Confederacy

Home and School Parent-Teachers Federation of Manitoba

Interlake Development Corporation Inc.

Junior League of Winnipeg

Manitoba Association of Registered Nurses

Manitoba Association of Urban Municipalities

Manitoba Bar Association

Manitoba Environmental Research Committee

Manitoba Chambers of Commerce

Manitoba Farm Bureau

Manitoba Farm Business Association

Manitoba Federation of Labour

Manitoba Forestry Association Incorporated

Manitoba Historical Society

Manitoba Institute of Agrologists

Manitoba Medical Association

Manitoba Naturalists Society

Manitoba Nursery and Landscape Association

Manitoba Parks and Recreation Association

Manitoba Teachers Society

Manitoba Wildlife Federation

Manitoba Women's Institute

Mining Association of Manitoba

National Farmers' Union

Norman Regional Development Corporation

Parkland Regional Development Corporation

Pembina Valley Regional Development Corporation

Provincial Council of Women of Manitoba

Town of Selkirk Council

Union of Manitoba Municipalities

United Steelworkers of America (Local 6116)

United Steelworkers of America (Local 7106)

University Women's Club of Winnipeg

Winnipeg Labour Council

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COUNCIL CHAIRMEN

The first organizational meeting of the Council was held on January 28, 1972 when various task forces were established to formulate the Council's direction and operation. At the second meeting on November 17, 1972, an Executive was elected with Lloyd Axworthy as Chairman. The election of officers was changed to the Annual Meeting in the spring of 1974. A list of Council Chairmen follows:

1972-73	Lloyd Axworthy
1973-74	Lloyd Axworthy (To Dec. 5, 1973)
	Ken Arenson (From Dec. 5, 1973)
1974-75	Ken Arenson
1975-76	Allen M. Lansdown
1976-77	W.J. Turnock
1977-78	Onno Kremers
1978-79	David Punter
1979-80	Rosemary Malaher
1980-81	Basil Rotoff
1981-82	Bill Kennedy

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PUBLICATIONS

Publications are distributed, without charge, upon written request and to those on the mailing list which includes Manitoba public libraries and many Manitoba school libraries. Council publications are listed in **Canadiana** and the Queen's Printer (Manitoba) Monthly Checklist. Publications issued after 1976 are recorded on microfiche in Micrologg, available from Micromedia Limited, Toronto.

Issued

Annual Report One: 1973, 32 p., 1973 - out of print

Annual Report Two: 1974, 72 p., 1974 - out of print

Annual Report Three: 1975, 54 p., 1977

Annual Report Four: 1976, 79 p., 1977

Annual Report Five: 1977, 110 p., 1978 - out of print

Annual Report Six: 1978, 87 p., 1979 - out of print

Annual Report Seven: 1979, 148 p., 1980

Annual Report Eight: 1980, 101 p., 1981

Annual Report Nine: 1981, 88 p., 1982

Study 1, 1974, 4 p. Manitoba Environmental Problems and Public Opinion by J. J. Keleher and Karen Z. Hendin - out of print

Study 2, 1974, 61 p. Garrison Diversion Project Presentations, W. G. Leitch and J. J. Keleher, eds. - out of print

Study 3, 1974, 4 p. Manitoba Environmental Agencies and Activities by J. J. Keleher - out of print; Revision (Info. Ser. No. 9, 1976, 27 p.) is available from the Environmental Management Division, 139 Tuxedo Avenue, Winnipeg (895-5337)

Study 4, 1975, 171 p. Impacts of the Garrison Diversion Unit on Canada by D. H. Boyd - out of print

Study 5, 1975, 130 p. Manitoba 2000: Population Size and Distribution, K. B. Richmond and J. J. Keleher, eds.

Study 6, 1975, 127 p. Nuclear Energy: Fact and Fantasy, Ken Arenson, Chairman

Study 7, 1977, 35 p., The Winnipeg Townscape: A Survey Guide by H. J. Selwood - out of print

Study 8, 1977, 130 p., Rural Land Use Conflict: Some Solutions, William Bell, Chairman - out of print

Study 9, 1977, 162 p., The Energy Issue: Demand and Supply, W. J. Turnock, Chairman

Study 10, 1978, 145 p., Manitoba Water Quality Objectives: How far do we go? Alex Fedoruk, Chairman

Study 11, 1978, 37 p., Trees and Pesticides: An Environmental Dilemma, Peter Aitchison, Chairman - out of print

Study 12, 1978, 112 p., Winnipeg 100: Alternative Futures, Ken Arenson, Chairman

Study 13, 1979, 51 p., Environmental Education: Hope for the Future, Rosemary Malaher, Chairman

Study 14, 1981, 48 p., Parks for Manitoba: Policy and Practice, John Jack, Chairman

Forthcoming

South Indian Lake and Hydro Development

Red River Flooding: Causes and Solutions

Hazardous-Chemical Wastes: Many Problems, Some Solutions

10th Anniversary Celebration

* * *

BRIEFS

This section is a compilation of briefs i.e. resolutions that were prepared by Committees, etc. in response to specific issues or subjects. They are not regarded as publications and therefore are not automatically distributed. Copies will be made available upon request until the supply is exhausted. Some of the briefs are published in the Annual Report. This list is for the period April 1, 1981 to March 31, 1982. However, briefs identified by the **bold face** source citation were prepared in conjunction with the Annual Meeting of May 14, 1982. They also will be listed in the next Annual Report to provide a correct output for each fiscal year but will then be printed in italics to call attention to their double entry status.

Education Committee

Brief for Council consideration
May 14, 1982 meeting
re. List of Manitoba Environmental Publications
Annual Report Ten . . . p. 19

Energy Committee

Brief for Council consideration,
Dec. 7, 1981 meeting
re. Manitoba Hydro resources
Annual Report Ten . . . p. 20

Environmental Chemicals Committee

Brief for Council consideration
May 8, 1981 meeting
re. Aluminium smelter
Annual Report Nine . . . p. 29

Brief for Council consideration
May 8, 1981 meeting
re. E.M.D. Hazardous Chemical Program
Annual Report Nine . . . p. 26

Brief for Council consideration
Dec. 7, 1981 meeting
re. Environmental Impact Assessments Major economic projects in Manitoba
Annual Report Ten . . . p. 24

Brief for Council consideration
Dec. 7, 1981 meeting
re. Environmental Information re. Aluminium Reduction Plant
Annual Report Ten . . . p. 24

Brief for Council consideration
May 14, 1982 meeting
re. Public Release Impact Assessments Proposed Smelter
Annual Report Ten . . . p. 25

Brief for Council consideration
May 14, 1982 meeting
re. Long Range Air Pollutants
Annual Report Ten . . . p. 26

Brief for Council consideration
May 14, 1982 meeting
re. Smelter Licensing for Inco Metals Co.
Annual Report Ten . . . p. 27

Brief for Council consideration
May 14, 1982 meeting
re. Mosquito Control Programs in Manitoba
Annual Report Ten . . . p. 30

Land Use Committee

Brief for Council consideration
May 14, 1982 meeting
re. Land Use Impacts Proposed Alcan Smelter
Annual Report Ten . . . p. 39

Water and Waste Committee

Brief for Council consideration
Dec. 7, 1981 meeting
re. Red River Water Quality
Annual Report Ten . . . p. 43

Brief for Council consideration
Dec. 7, 1981 meeting
re. Atomic Waste Disposal
Annual Report Ten . . . p. 43

Brief for Council consideration
May 14, 1981 meeting
re. Sewage disposal in Manitoba waters
Annual Report Ten . . . p. 43

Wildlife Committee

Brief for Council consideration
May 8, 1981 meeting
re. Importing and Raising Raccoon Dogs
Annual Report Nine . . . p. 46

Brief for Council consideration
May 14, 1982 meeting
re. Master Plans for Grass R. and Turtle Mt. Provincial Parks
Annual Report Ten . . . p. 46

Other Briefs

Brief for City of Winnipeg
Feb. 11, 1982 meeting
by Bill Kennedy
re. Plan Winnipeg
Annual Report Ten . . . p. 40

Brief for Council consideration
May 14, 1982 meeting
by Ruth Corobow
re. Recycled Stationery
Annual Report Ten . . . p. 44

Brief for Council consideration
Dec. 7, 1981 meeting
by Barry Wild
re. Lake Manitoba Narrows Park
Annual Report Ten . . . p. 46

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FORUMS AND TALKS

The following event was sponsored by the Council during the fiscal year:

The Environment 70's: Review & Prospect

David Punter, Chairman, Sidney Green, Allen Lansdown, Serge Scrafield, Hon. Mr. Justice T. R. Berger.

Legislative Building, Winnipeg

December 7, 1981

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MANITOBA ENVIRONMENTAL COUNCIL

FINANCES

The Council is funded by a legislative appropriation to the Environmental Management Division. The dollar amounts listed are for "other expenditures" and do not include "salaries". Dash denotes missing information. The cost of administration services, e.g. accounting and secretarial, is largely borne by the Division.

Table 7 Financial Data

Fiscal Year	Voted	Expended	Percent
1971-72	—	—	—
1972-73	2,500	—	—
1973-74	18,200	7,400	41
1974-75	17,100	15,000	88
1975-76	15,000	16,200	107
1976-77	13,100	11,700	89
1977-78	16,300	15,132	92
1978-79	16,900	16,621	98
1979-80	16,900	20,432[a]	121
1980-81	16,900	16,894[a]	99
1981-82	25,800	27,437[b]	106

a: $1912 deffered to 1980/81 accounts and Division paid $1638.

b: Deficit Absorbed by Division

Table 8 Expenditures 81/82

	Type	Amount($)
21	Prof. and other fees	1032
31	Real Estate Rentals	40
346	Publications	7749
34	Printing	2579
35	Postage, Phone	56
41	Recording Meetings	454
45	Computer	41
61	Advertising	3280
65	Courier Service	212
–	Travel	6601
67	Dinners	3016
76	Subsistance	2339
–	Misc.	38
	Total	27437

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COUNCIL STAFF

J. J. Keleher, M.A. - Executive Secretary

Secretarial Pool - Ms. Barbara Deans, Head

* * *

COLOPHON

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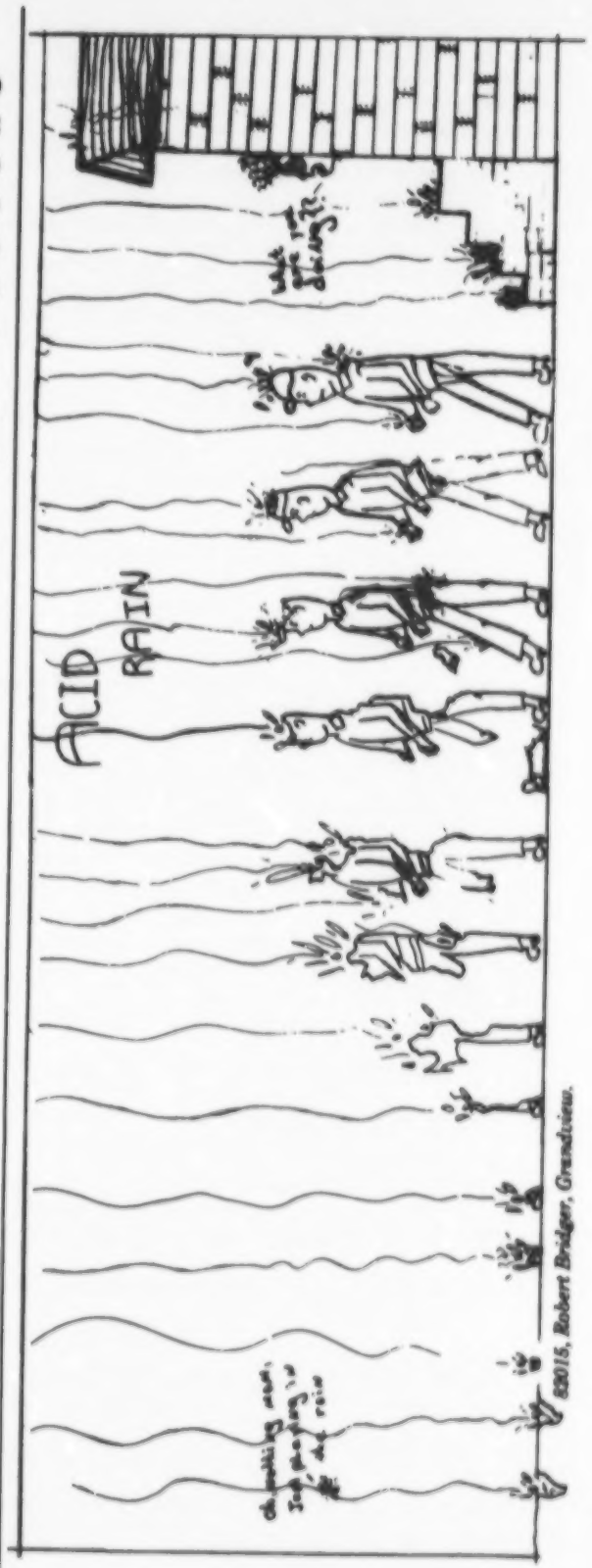

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